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COLONEL GEORGE M. RUSSELL, Cavalry, Editor

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Contents

The Cavalry School Hunt, Fort Riley, Kansas .... *Frontispiece*

Command and Control System in Horse Cavalry Regiments Equipped With Motorized Field and Combat Trains and Armored Cars 5
Colonel Charles F. Martin, 13th Cavalry

Fox Hunting in the Army 9
Major William M. Grimes, Cavalry

Army and Navy General Hospital, Hot Springs, Arkansas .. 12
Alta Smith

The Battle of the Little Big Horn 13
Colonel Timothy M. Coughlan, U. S. A., Retired

1933 N. R. A. Rifle and Pistol Champions 22

Out of the Grand Canyon on a Litter 23
Major Robert P. Williams, M. C.

Ranald Slidell Mackenzie 25
Major Joseph Mills Hanson, F. A. Reserve

Pushing Age Back 33
Colonel George A. Skinner, M. C.

Musketry 37
Colonel Laurence Halstead, Infantry

Extracts from Leaflet No. 211, Horse and Mule Association of America 40

The Grand Strategy of the World War, Part III 41
Captain Gordon Gordon-Smith, Attaché, Yugoslav Legation

Advantages of Oat Crushing 46

Why Not a Command Eligible List? 47
Lieutenant Colonel Bernard Lentz, Infantry

What Should the Soldier Eat? 49
Major Reuben Noel Perley, I. G. D.

Notes from the Chief of Cavalry 53
What Would You Do in a Situation Like This?—Address of Major General Guy V. Henry, Chief of Cavalry, made before the National Guard Officers' Association, Utica, N. Y., January 19, 1934

Current Topics 56
Minutes of the Annual Meeting of the Cavalry Association.

Professional Notes and Discussion 57
Professional Article Praised (General W. C. Brown) —Historical Note (Little Big Horn) — New Facts Simplify Bot Control.

National Guard Notes 58
Making Code Practice Successful (Lieutenant George W. Fried, 205th Infantry, Minnesota National Guard) —News of National Guard Bureau — The Art of Instruction — The National Guard Association Annual Convention.

Reserve Notes 62
Excerpts from Annual Report of Major General Douglas MacArthur, Chief of Staff, U. S. Army.

Book Reviews 64
Polo Ponies (Lieutenant Paul G. Kendall) — The Gallant Company (H. R. Williams) — Horses from Dealer to Covert ("Spider" Jacobson) — Frog (Captain S. P. Meek, O. D.) — Balancing Daily Diets (Major Reuben Noel Perley, I. G. D.) — Modern History (Carleton J. H. Hayes and Parker Thomas Moon) — Liberalism in Mexico (Wilfred Hardy Calcott).

Sports 66
Racing Arab Horses in Egypt (Hamilton M. Wright) —Brussels International Horse Show — Warsaw I. H. S. — Dublin I. H. S. — The 1933 Charger Championship (France).

The Foreign Military Press 69
Major Alexander L. P. Johnson, 34th Infantry

Organization Activities 74

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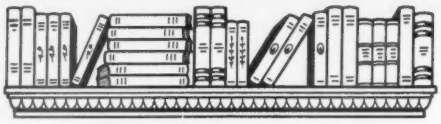

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Organized November 9, 1885

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The Cavalry School Hunt, Fort Riley, Kansas

Command and Control System in Horse Cavalry Regiments Equipped With Motorized Field and Combat Trains and Armored Cars

By Colonel C. F. Martin, 13th Cavalry

THE contemplated substitution of modern motor trucks for the escort wagons of the Field and Combat Trains of Cavalry Regiments and equipping them with armored cars would require readjustment of existing Tables of Organization and suggests careful consideration of the Command and Control System which is embodied in the Regimental Headquarters and Headquarters Troop.

With the Escort Wagon in its Field and Combat Train, Cavalry has been greatly restricted in its strategic mobility. Even on good roads and under favorable marching conditions, animal-drawn trains loaded with supplies and ammunition could not be expected to maintain a higher average rate than twenty-five miles a day. Over muddy or sandy roads or under unfavorable conditions of weather, this average had to be considerably reduced. Except for special types of service, Cavalry can not long be separated from its trains; even if able to subsist off the country so far as its men and animals are concerned, its rapid-firing modern machine guns and rifles demand prompt replenishment of ammunition, and ammunition is heavy and bulky.

Many of the elements of our command and control system have been based on slow marching rates determined largely by the animal-drawn combat and field trains; for example, the mounted messenger system and the pack radio. There is no organized system of fast-moving ground communication based on motor vehicles. Motorcycles, reconnaissance or command cars are not included in our peace-time organization.

With modern light motor vehicles in the Combat and Field Trains, the average rate of marching can be greatly increased—can, in fact, be based upon the capacity and condition of the Cavalry horse. With the revised schedules of trot and walk now being employed in our service, average marches with well-conditioned horses, under favorable conditions, can well be 35 or 40 miles a day, or higher.

At the rate of six miles an hour or faster, the practice of using mounted messengers for communicating with flanking groups, the rear of the long columns, etc., becomes inefficient and inadequate. So does the pack radio system for frequent use in a marching column. The strain of regaining position in a long fast-marching column is too great. Similarly inspections by the commander or his staff, to determine the condition of men and animals, or for other purposes, impose too great a strain on horseflesh and keep the officer too long away from positions where he may be vitally needed. Furthermore, for these extra movements, faster-moving situations will be imposed by the long rapid marches and the swiftly unrolling tactical situations which will develop as a result of the introduction of mechanized and motorized equipment, because this added mobility required for command and control purposes must be imposed upon the greatly increased strategic mobility of the horse, which will be in itself near the maximum capacity of the horse.

In this connection, I use the term *strategic* mobility to indicate the marching rate or speed employed to reach vital areas, in which *tactical* mobility (which includes that of messengers, staff officers and commanders on reconnaissance or other duties connected with command and control) is employed to meet a particular tactical or combat situation.

In recent marches and maneuvers with a Cavalry Regiment equipped with motorized field and combat trains, this problem of command and control has been especially studied, and the need for faster means of communication has been amply demonstrated. In view of the fact that Cavalry leaders generally recognize that in the future motorization and mechanization will to an extent not yet determined become a part of horse Cavalry organizations and will—in the accomplishment of true Cavalry missions—work both with and against horse Cavalry, it seems hardly necessary to dwell greatly upon the necessity of reorganizing our command and control system in Cavalry units; but the facts are that at least our peace-time organization does not provide for this vital need; that we expect to go into a war, in case of an emergency, with our peace-time organization and that every great leader in recent times has emphasized the vital but continually forgotten truism that, if you expect to apply a system or use a weapon in war, you should have it and know it thoroughly in peace.

THE NEED FOR COMMAND CARS

During the past summer (1933) the 13th Cavalry made a march, during which an ordinary automobile was employed as a Command Car. The weather was very hot, and the roads were mostly over very undulating country—continually uphill and downhill. The marching system of short walks and longer trots (but not to exceed seven minutes at a time) was employed. After the first hour this system with an average of three minutes of walking, seven minutes of trotting and five minutes as an hourly halt, gives a rate of about six and one-half miles an hour—quite good going in hot weather or on heavy roads. For marches of more than thirty miles a day, it was desired to apply this system so far as practicable, modifying it when necessary to prevent suffer-

The Cavalry School Hunt, Fort Riley, Kansas

ing on the part of the animals. Leading was used into and out of halts and as deemed necessary on slopes. Average distances between squadrons and troops of seventy-five yards and between platoons of twenty-five yards, while at the walk, were prescribed. Platoons and units of similar size (like the Regimental Command Group) were supposed to use similar gaits on corresponding stretches of road, changing gaits at the same point, so far as practicable. This method of marching results in extending the distances by about 100 to 125 yards between successive units, as the trot is successively taken (reducing it again at the successive walks, leads, and halts) and it practically doubled the road distance of the Regiment, marching in column of twos.

Water could be obtained only from the municipal (fire) hydrants of towns along the line of march; the canvas water troughs of all troops being set up together and kept filled as one troop at a time watered and moved out. Unless in such cases the successive troops were held after watering, resulting in a loss of time at each watering point of from twenty-five to forty minutes for the leading elements, distances of from four to five minutes between troops occur in the morning; and at other halts where watering is done, this still further extends the length of the column, and the distance is hard to make up on long fast marches, particularly in hot weather.

The Command Car proved invaluable for many purposes. Except when on special missions, it marched by bounds between the Advance Guard and the Commander's Group; or, when no Advance Guard was used, just ahead of the Commander's Group, to which it reported at every halt of the column or upon signal.

It reported when the last unit had left camp, the distances between units, the condition of animals in units, and unusual incidents that occurred en route in the column. At least once an hour, it halted, allowed the column to pass, received reports from unit commanders and from the medical officer and the veterinarian at the rear of the column. It went ahead and determined the exact location of halts to be made, the set-up of the watering troughs (which preceded the column in the light trucks of the Combat Train); placed signs (specially prepared for the purpose in the Regimental Intelligence Section) showing directions to be taken at road junctions. It carried messages to units in rear or units ahead. It dropped back and picked up the Veterinarian, as the head of the column neared the bivouac and allowed him thus to join the Regimental Commander in observing the condition of the animals as they were led into camp. One of the most valuable services in these long hot marches was to keep the Commander informed as to the condition of units in rear, so that the march schedule could be promptly modified—length of trots decreased; walks leads, and halts increased—and this, undoubtedly, resulted in saving much suffering and injury to animals and brought them into camp in generally good condition.

In a more recent period of maneuvers in which the Regiment participated as part of a reënforced brigade, the Command Car proved its value in innumerable ways.

In the first place higher authority had directed that radio sets be in operation every half-hour for at least ten minutes at a time. The Command Car radio net not only permitted this, but it could constantly "listen in" and when necessary stop and reply to a message or send one, and yet quickly regain its place with the Commander's Group. Pack radio sets at the rate of march used would have been exhausted and generally absent from their proper place owing to sheer inability to keep up. The Command Car was used for many purposes of control, inspection, reconnaissance, and communication, both night and day; between the Command Group and Advance Guard, Rear Guard, Detached Posts, and Higher Headquarters, thus relieving weary horseflesh and saving valuable time.

On the march, the Command Car can easily display on the ground or on its own roof a panel for identification by friendly airplane or transmit in the same manner brief pre-arranged signals. By keeping the air service informed as to the identity of its column, it can prevent delivery of dropped messages to the wrong column. It can carry a staff officer with important orders or can transmit several copies of a written message quickly and expeditiously and rejoin with the assurance that orders have been delivered and that important plans are assured of understanding and coördination. It serves a hundred useful purposes, many of vital importance.

It may be said that one or two of the Armored Cars which it is expected will be added to regiments can be used as Command Cars, but there are too few of those for the important functions for which they are intended; and the purposes are distinct, and different.

The Command Car can be any ordinary commercial type. It might be lightly armored, but only about the sides and around vital parts of the mechanism. It should have at least one machine gun, which can be quickly removed from the car and set up as an "out-guard" weapon when the car halts under cover to send a radio message, prepare a message, or for other command purposes. It should have a radio set and a device for the quick preparation of written messages in multiple form.

In this connection—of written messages—we recognize their usefulness and prepare (a Field Message book) for their use; but many contend that there is no time in the Cavalry for writing orders or messages—everything must be dictated or oral. I want to stress the fact that I am not advocating anything that will slow up Cavalry action—when *speed* is the essential. Then, a brief command—a signal, may suffice and should do so. But when *accuracy*, not speed, is necessary or *accuracy and speed*, a written message can often be not only life insurance but protection against loss of victory. History is replete with records of battles lost, reputations ruined, and untold misery due to misunderstood orders transmitted by word of mouth. Any commander can prove for himself the great

difficulty in getting results by means of oral messages and orders. When dictated and oral orders are pyramided by successive withdrawals of commanders from their units —say (considering only small combat units) from brigade to regimental and similar units, from regimental to squadrons, from squadrons to troops, and so on down— the delay in getting information and orders down to the units of execution is tremendous, and often prevents proper reconnaissance and preparation in the lower units. The same principle should apply here as the old A.E.F. slogan of supply, "from rear to front"; if you can quickly —*when time permits*—get the essentials reproduced in writing and quickly get them delivered (as the motor command system or communication will permit), promptness and accuracy will be gained. The new Remington portable noiseless No. 8 typewriter is a compact little affair which, in the hands of a good operator with the right kind of paper and the right kind of carbon, will make 14 or more unblurred copies of a message in half the time it can be painfully inscribed in triplicate in a Field Message Book. There may be better machines or devices; better ones can be built. But there is every reason for such a device in the Command Car; it supplements the radio, permits a Staff officer to turn over his horse (which may continue with the marching column), jump in the Command Car, prepare a dozen copies or more of an important message or order, and get them quickly distributed to different commanders. The plans, orders, or information from the regimental commander must be made known to subordinates, and a large amount of the time often lost in repeating the essentials from the higher headquarters through the various subordinate echelons could be saved by delivering several copies of important messages or orders to such commander of the next lower echelon. It would shorten the orders he and his subordinates in turn would have to give out, and make for greater accuracy. In a machine age we should use every machine that offers a better method of getting things done.

There should be three Command Cars in a war-strength Regiment. Each should have a chauffeur, a radio operator and typist, a machine gunner, space for two additional passengers. Each should carry a radio set, panels for signaling (halted or moving) to airplanes, a modern portable typewriter of the kind described above (or some more efficient device for producing written messages and orders in multiple), a 50-caliber machine gun (detachable and equipped with a separate light mount for use on the ground), a sub-machine gun. The weapons would be for purely defensive purposes, the cars being primarily for use within the unit and behind protective detachments like advance guards, outposts, etc.

ORGANIZATION OF THE REGIMENTAL HEADQUARTERS TROOP

The question of whether the next war will be won by a nation in arms or by the best equipped standing or professional army is an interesting one admitting of much debate. As the result of much thought after the World War some of the best military minds, like Foch, Debeney, Von Seeckt, have concluded that, in this machine age with its complicated and highly technical means of combat, at least that part of the available forces known as the professional or standing army must have in its hands and be trained in the use of the weapons and other technical means that will be needed at the beginning of the war.

In our own service, we have, I think, come to the conviction that the Regular Army at least must expect to take the field as it stands. In other words it can expect to be thrown into campaign with the personnel, the organization, the weapons and equipment in its hands at the outbreak of war.

We are getting into our equipment more and more powerful and efficient weapons, improved and faster means of transportation, more technical and complicated equipment requiring a high degree of training and knowledge. These conditions make more important than ever the organization of the Command and Control system, because if these powerful means of movement and combat can not be controlled and directed smoothly and easily, their value will be lost.

These conditions emphasize the necessity for careful consideration of the peace-time organization of the units in which the system of control, command, and coördination is incorporated. In the Cavalry Regiment this unit is the Headquarters Troop. Nothing should be done to impair its efficiency; on the other hand everything should be done to improve it.

Certain vital things must at all costs be retained in the Cavalry regiment: mobility; a balanced organization that will keep the regiment a self-sustained administrative and combat unit; and—most important of all—the vital heart of the body—the Command and Control system, without which the whole structure falls apart.

Therefore, at all costs, I believe, the Headquarters Troop, composed in the main of specialists and technicians, requiring long and special training, should be maintained with an organization and with sufficient strength to permit it to perform its peace-time functions and to take the field ready to operate efficiently. The Headquarters Troop should at all times be a homogeneous, well-trained team, with each man knowing his part in the whole.

In the Headquarters Troop there must be a group that can handle the administrative duties of the Regiment, both in peace and in war. The enlisted men forming this group must be familiar with the regulations, the administrative routine, and the customs of the service—and that is a large order. Recently the personnel work pertaining to troops has been taken out of regimental headquarters and returned to the troops but there still remains a vast amount of regimental administrative work to be done; and the work done in the troops that passes up to higher headquarters must be understandingly examined and checked at regimental headquarters. It is, therefore,

imperative to keep the necessary nucleus of trained non-commissioned officers and specialists.

Of equal importance are the groups charged with duties related to tactical operations and logistics—agencies for supply, communications, command, and control duties.

The following groupings show the minimum of enlisted men which command and administrative experience has demonstrated as essential:

CAVALRY REGIMENTAL HEADQUARTERS TROOP FOR REDUCED PEACE STRENGTH*

(Total Enlisted Men—78)

1. *Troop Headquarters* (Total 14).
   1 First Sergeant: 3 sergeants (1 mess, 1 stable, 1 supply) for administrative functions within the troop itself.
   10 Privates 1st class and privates (namely: 2 buglers 6 cl); 1 Clerk (4 cl); 2 Cooks (4 cl—both should have the same rating); 1 Horseshoer and Farrier (4 cl); 1 Assistant Horseshoer (5 cl); 1 Messenger; 1 Saddler (5 cl); 1 Wagoner, Spring Wagon (6 cl).
2. *Heaquarters Platoon* (Total 15).
   (a) Regimental Hq., Platoon (total 12 EM).
   1 Master Sergeant (Sergeant Major—duties executive and administrative).
   1 Technical Sergeant (in charge of clerks; checks and verifies troop personnel papers and reports—Chief of Section).
   2 Stenographers and Clerks, 4 cl. One assistant and understudy to Technical Sergeant and one stenographer for the Regimental Commander and Staff.
   4 Staff Sergeants (1 Color Sergeant; 1 Plans and Training—in P and T Section—2 Squadron Sergeant Majors).
   1 Sergeant Bugler.
   2 Corporal Buglers (Squadron Hq., buglers and messengers).
   1 Clerk, 4th Class Specialist; Regimental Records.
   (b) Supply Section, Regimental (Total 3 EM).
   1 Master Sergeant, Regimental supply system.
   2 Privates 1st class (4th and 5th class Specialists).
3. *Transportation Platoon* (Total 7 EM).
   1 Sergeant (Truck Master).
   1 Private 1st class, 4th class Specialist; Mechanic.
   5 Privates, Chauffeurs (truck).
4. *Communication Platoon* (Total 24 EM).
   (a) Platoon Headquarters (Total 6 EM). (Two Command Cars).
   1 Technical Sergeant, Typist, Chief of Section.
   1 Sergeant, Radio, typist.
   1 Chauffeur, Pvt. 1cl, 3rd or 4th cl Specialist; Mechanic; Command Car.
   1 Chauffeur, Command Car, Pvt. 1cl or Specialist 5cl, Mechanic.
   2 Radio Operators and Car Commanders; Code and Panelmen; Corporals or Pvts. 1 cl and 4th cl Specialists.
   (One gun on car to be operated by either the chauffeur or radio operator, according to the situation)†
   (b) Message Center (Total 8 EM).
   1 Sergeant, Clerk, typist, codeman, panelman, Regtl. Hq: Chief of Section.
   1 Corporal, Clerk and Codeman, Asst. to Sergeant.
   2 Clerks, typists, 1st Class Privates; 5th cl Specialists.
   4 Privates, Messengers, Specialists 5th Class.
   (c) Radio and Panel Section, Radio Pack Section (10 EM) (2 pack radio groups).
   2 Sergeants, Radio, Panel and Codes.
   4 Privates, Miscellaneous; horse leaders and assistants.
   4 Operators, radio, privates 1st class; 2—4th cl and 2—5th cl Specialists.
5. *Armored Car Platoon* (Total 18 EM) (Two Sections).
   2 Sergeants, Car Commanders; radio operators, Chiefs of Sections.
   2 Corporals, Car Commanders; radio operators.
   2 Radio operators, 1st class Privates; 4th class Specialists, Car Commanders.
   3 Chauffeurs, Pvts. 1st class, 3rd or 4th class Specialists, Mechanics.
   3 Chauffeurs, Pvts. 1st class; 5th class Specialists, Mechanics.
   6 Machine gunners.

6. Our present Peace Strength Tables allow for seventy-eight enlisted men in the Regimental Headquarters and Headquarters Troop. This proposed reorganization does not increase this strength, yet it provides for two Command Cars and for an Armored or Scout Car platoon. It also provides for a necessary Troop Clerk—a requirement which must also, by the way, be provided for in Rifle Troops and the Machine Gun Troops since the former personnel section of Regimental Headquarters has been eliminated. It renders inactive the Pack and Demolition group. It does not, however, provide for about four badly needed additional messengers and leaders for spare horses.

In the Transportation Platoon, the regimental control and repair men, as well as the chauffeurs for the Regimental and Headquarters Troop trucks, are provided. The chauffeurs and trucks for the other troops are left with the troops, as is now done with the escort wagons. This provides for better service for the troops but may perhaps not be so satisfactory from the regimental point of view; however, troop trucks can always be easily

*Most of the suggestions contained in this article are incorporated in new Tables of Organization now being drawn up in the Office of the Chief of Cavalry, for the Cavalry Regimental Headquarters Troop.

Some of them have already been put into effect by War Department letter of January 12, 1934, which has substituted the light truck for the escort wagon in Cavalry regiments; the combination wagon-motor trailer is being supplied in lieu of the spring wagon. The organization of a transportation platoon is provided for, and a scout car (armored car) platoon is ordered to be organized in each regimental headquarters troop.

†A machine gunner should really be provided, but we are reducing to minimum possibilities

(Concluded on page 80)

Fox Hunting in the Army

By Major W. M. Grimes, Cavalry

(Member Masters of Foxhounds Association of America)

YEARS ago the celebrated 'untin' groceryman from London aroused the interest of military men by likening fox hunting to war. Jorrocks, speaking of the Noble Science: " 'Untin', as I have said, is the sport of kings, the image of war, without its guilt, and five and twenty per cent of its danger".

Fox hunting as a sport has appealed to army men for ages. Galloping hoofs, cry of hounds and a keen, fast burst are akin to the thrill and surge of a charge; there is esprit, romance, tradition, and pageantry not found in any other sport. Hunting brings many military principles into play; what better illustrates surprise, mobility, drive, and determination? Riding to hounds develops an eye for country and ability to negotiate it rapidly. History records that the Duke of Wellington regularly maintained and hunted a pack in many of his campaigns. During the World War there were several instances of British Army packs in back of the lines in France. After the Armistice hunting was established in Allenby's Army in Palestine; likewise, in our own Army at Coblenz. With the present-day sedentary existence imposed on our Army, any sport like fox hunting that demands rigorous outdoor riding cannot but be of benefit to one's physical stamina, endurance and courage. Yes, the military man, if he be an "obnoxious pursuer of the uneatable", can profit professionally, develop physically, and enjoy sport royally.

Fox hunting is one of the oldest sports in this country, dating back to colonial days. The American Army's first Commander-in-Chief, General George Washington, was a real fox hunter, actively and prominently identified with Virginia fox hunting. Many are the references in his diary to horse and hound. In this connection it was most fitting that on February 22, 1932, the bi-centennial year, a joint meet of the Virginia and Maryland hunt clubs was held to honor the memory of the first Commander-in-Chief and the sport he loved, particularly so since this joint meet was staged in the same county and country in which Washington hunted.

Hunting with horse and hound was not only a pioneer sport, but practically the only sport indulged in by our Army during the early days; such, however, was only a natural and normal result of circumstances, for in the frontier days of our country, when civilization was gradually creeping westward, our Army was scattered at various outposts; Army life was monotonous, and relaxation and sport lay in riding and hunting. Early Army records disclose the fact that much of the hunting of jack rabbit and coyote was done with hounds. Indeed, that gallant beau sabreur, General George A. Custer, is said to have taken a pack of hounds with him wherever he went, including the Indian campaigns participated in by his regiment.

Fort Riley, Kansas, has always been actively associated with all forms of mounted sport. It was a natural and normal result of circumstances, therefore, that organized hunting in the Army started on the broad acres of the Riley Reservation. The first successful attempt to form an organized pack in the Army was made about 1896 by Lieutenants H. T. Allen and C. G. Treat (both later in their careers distinguished general officers). In the early days the reservation and adjoining country abounded with jack rabbits and coyotes, the first quarry of Army hunts. Hunting at Fort Riley has been kept up practically continuously since 1896, except for two brief interruptions during the Spanish-American and World Wars. In 1910 the 11th Cavalry Hunt, Fort Oglethorpe, Georgia, received recognition from the National Steeplechase and Hunt Association—the first recognized Army Hunt. Speaking of early Army hunts—Hunt Call was sounded at 10:00 a. m. each hunting morning during the 1899 season at Fort Riley; whereas, in the 11th Cavalry, the Regimental Commander, Colonel James Parker (later Major General), issued a regimental order designating Friday as regular hunt-day and required all regimental officers to turn out and follow the 11th Cavalry hounds.

Strange as it may seem, while the motor car and truck have practically dethroned the horse from commercial pursuits, the horse has become enthroned supreme in sport. The period since the World War has awakened

Field Artillery School Hunt, After the Kill.
Lieutenant Colonel G. M. Peek, F. A. Joint Master, who hunted the pack on the opening day, October 15.

FORT SNELLING HUNT
Left to right: Lieutenant James Fish, III, Infantry; Major R. T. Seymour, V. C.; Lieutenant H. H. Geoffrey, F. A.

a great interest in all forms of equestrian sport. This is as true in the Army as in civil life. A greater proportion of Army officers are now indulging in mounted sports than ever before. As a proof of the foregoing, glance at the number of Army clubs affiliated with the United States Polo Association, the Army horse shows on the calendar of the American Horse Show Association, Inc., and the Army hunts recognized and listed with the National Steeplechase and Hunt Association.

The Army boasts the proud record of four (4) such hunts. They are:

The Cavalry School Hunt, Fort Riley, Kansas.
The Field Artillery School Hunt, Fort Sill, Oklahoma.
The Infantry School Hunt, Fort Benning, Georgia.
The Fort Leavenworth Hunt, Fort Leavenworth, Kansas.

The Cavalry School Hunt, Fort Riley, Kansas, is one of the oldest and probably is the best known of the Army hunts. Its hunting country comprises the military reservation of approximately 20,000 acres of rolling upland prairie, broken by numerous woods, draws and ravines, and includes portions of the valleys of the Smoky Hill, Republican, and Kansas Rivers. The Hunting country is unfenced, except for a considerable number of pastures. Where such fences are of wire, suitable panels replace the wire at appropriate points so that hunting may be conducted on all parts of the military reservation. The Riley Reservation is noted for its splendid turf and grand galloping; very few hunts in America can boast of better going and withal free from the *bête noire* of the average eastern hunt—paved roads and automobiles. The valley of the Kansas River and its tributaries being apparently unsuitable for foxes, coyotes constitute the live game of the Cavalry School hounds. In addition, drag hunting is participated in once or twice a week. Frequently, for coyote hunting, the fox hounds are augmented by from six to ten greyhounds belonging to individuals residing on or near the military reservation. The fox hounds are then used as in the early days, to draw the coverts and bring the quarry out into the open, while fine runs and frequent kills are made by the sight hounds.

The Cavalry School Hunt has always been known for its excellent pack. It has received many fine drafts from generous sportsmen, who have evinced such a friendly interest. In 1922, when the American troops evacuated the Coblenz bridgehead and terminated the occupation of the Rhineland by the American forces, the late Major General H. T. Allen donated the Coblenz pack of French staghounds to the hunt, and these hounds, crossed with the American hounds, established a breed which was useful and predominant. The present pack now consists largely of imported English hounds, donated by the Chagrin Valley Hunt and the Washington County Hunts. Ordinarily, three fixtures per week are scheduled, two drags and one coyote hunt. On one drag per week all students of the Cavalry School are required to attend as a part of their official instruction in horsemanship. On other hunts the field varies in size, sometimes as many as one hundred, occasionally as few as twenty-five, participating. The present Master is: Major R. L. Coe, Cavalry. The Cavalry School Hunt was recognized in 1922. Uniform and colors: scarlet coat, yellow collar.

The Field Artillery School Hunt is located at Fort Sill, Oklahoma, an old frontier post reeking of covered wagons, land rushes, opening Indian lands, and what not. Fort Sill has always been a happy hunting ground, with an abundance of game on the prairie and in the foothills of the Wichita Mountains. Like many other Army posts, hunting with hounds was kept up on more or less of a trencher pack basis. About 1926 a permanent organization was set up which was recognized in 1927 by the National Steeplechase and Hunt Association. The country of the Field Artillery School Hunt is rolling prairie, with hills, ravines and bottom land. Fort Sill is an artillery firing center, hence a pock-marked, shell-holed hunting country. The fences are few and far between, principally rail and chicken coops; however, the country requires a clever horse to negotiate the many ravines and streams, with the added thrill of dodging shell holes.

The country of the Feld Artillery School Hunt recorded with the Master of Foxhounds Association of America is probably the largest of any of the recognized hunts of this country. Both live and drag hunts are staged. The pack, an unusually fine one, consists of American crossbred and English hounds. Hounds meet twice weekly. The fields are large, averaging from 50-75. The present Master is First Lieutenant E. W. Searby, Field Artillery. Uniform and colors: red coat, with black collar.

The Infantry School Hunt is located at Fort Benning, Georgia. It was organized in 1923 and was recognized in 1927. This hunt enjoys the distinction of having an unusually large country; there are 97,000 acres of woodland, meadow, and swamp land in the military reservation of Fort Benning, all of which is available to the

Infantry School Hunt for its meets. The obstacles include ditches, fences, water courses, and fallen trees, not to mention swamps. The country abounds in wild cat and racoon; both the red and grey fox are fairly plentiful. The supply of wild pig is sufficient to make interesting sport throughout the winter. The season begins October 15th and continues during the winter to March 15th. Throughout this time the Infantry School Hunt holds its meets Sundays, Wednesdays, and holidays. As the wildcat (a type of the bobcat) frequents the same sort of coverts as the fox, the hounds are just as likely to strike a cat trail as that of a fox. In either case the chase is much the same, except that there is probably more straight running after a red fox. The wildcats seldom, if ever, climb a tree and have no dens, so it is always a race to the finish, or else the cat throws the hounds off scent in some stream or pond.

The Infantry School Hunt kennels forty-five couples; divided into a drag pack and a live pack (fox and wildcat, coon and wild pig.) This hunt states that they have found the American-Walker the outstanding hound for hunting the fox and wildcat on the Fort Benning Reservation. The Infantry School Hunt has received drafts from the Cavalry School Hunt, Middleburg, Meadowbrook, Milwaukee, and Aiken. Due to the many drafts this pack includes American-Virginia, Walker, English, crossbred and Harrier-American. The fields of this hunt are the largest of the Army hunts, averaging from 75-100 ardent enthusiasts. The present Master is Captain S. H. Negrotto, Infantry. Uniform and colors: scarlet coat, with Infantry blue collar.

The Fort Leavenworth Hunt Club was organized in 1926 and gained recognition in 1931. It is located at the Army's Command and General Staff School, to which institution come officers from all branches of the service; in consequence, from a hunting viewpoint, this hunt is in a position to disseminate much information about hunting to the Army at large. The country hunted is the military reservation of Fort Leavenworth, some ten square miles, which is mostly used for drags.

The Fort Leavenworth Hunt Club uses the surrounding country of both Kansas and Missouri for live hunting, and there is a plentiful supply of fox, coyote and wolf. The fences on the reservation average three and a half feet. The most serious obstacles, however, are the numerous drainage lines, the small ones being well hidden in tall grass and brush, while the larger ones are arroyos with steep sides and an appreciable stream at the bottom. The scent for drags is laid with coyote litter, so hounds are always ready to take on live game.

At the Fort Leavenworth Hunt Club the fixtures occur on Sunday mornings and on Wednesday afternoons and holidays. On Saturday mornings a Junior Meet is held for the "young entry" under sixteen years. The fields of juniors average about twenty, while the seniors turn out to the number of fifty-odd on Sundays, with a smaller representation at midweek. A number of civilians hunt regularly with the Fort Leavenworth pack. There are two separate packs, an American pack of twelve couples and an English pack of seven couples, five of the latter a gift from the Chagrin Valley Hunt. Major Pierson Menoher, Cavalry, and Captain M. E. Jones, Cavalry, are joint Masters. Uniform and colors: scarlet coat, green collar.

The Fort Snelling Hunt is located at Fort Snelling, Minnesota. The hunt was organized in 1928 but is not listed with the National Steeplechase and Hunt Association. The hunt is run under the auspices of the Officers' Club. In addition to its Army members, this hunt has the largest civilian membership of any Army hunt; hunt

The Infantry School Hunt, Fort Benning, Georgia

The Fort Leavenworth Hunt, Fort Leavenworth, Kansas

membership is extended to the citizens of Minneapolis and Saint Paul. The territory of the hunt is located on the military reservation of Fort Snelling. The country is ideally suited for drag purposes and has been nicely paneled. The pack consists of thirty-seven couples, principally American-Walker.

From the above it is quite evident that Army fox hunting, like Army polo, is not confined solely to the mounted branches. It is indulged in by all, and the effects are at once apparent in the physical condition and appearance of Army personnel fortunate enough to take advantage of the benefits derived from mounted sport.

Army hunts enjoy many advantages, privileges and prerequisites incident to being established on military reservations; otherwise, the cost involved in maintaining the country, the kennels, etc., would be prohibitive. Army hunts, without exception, are deeply indebted to the generosity and sportsmanship of their hunting friends in civil life for numerous drafts. The average hound list of the typical Army hunt reads like a cross section of our civilian hunts, so numerous and widespread have been the donations.

In general, the fields of the Army hunts are very large, with a considerable number of women riding. The hunt staff habitually turn out in scarlet, whereas the field usually rides in uniform or rat-catcher. Each Army hunt has its distinctive hunt colors, usually the color of the branch of service represented; thus the Cavalry, Field Artillery, and Infantry School Hunts are respectively yellow, red, and blue.

A large number of National Guard and Reserve Officers are identified with the hunt clubs of their respective communities; likewise, a considerable number of regular officers, who are on duty with the civilian components of our Army, have become members of local hunts. Especially is this true of officers stationed in and near the fox-hunting communities of our Atlantic seaboard

No, there is no danger of "mechanizing" sport in the Army. There will always be Army horsemen eager to join the mounted pageant and take their sport mounted with horse and hound.

Army and Navy General Hospital, Hot Springs, Arkansas

By Alta Smith

PERCHED on the side of Hot Springs mountain at Hot Springs National Park, Arkansas, towers the tallest building in "The Wonder State," a gift from Uncle Sam, a $1,500,000 ultra modern Army and Navy General Hospital, just completed and thrown open October 16 to retired and former service men, as well as to active members of the Army, Navy, U. S. Coast Guard Service, U. S. Public Health Service, and Coast and Geodetic Survey at nominal rates for subsistence and medicines.

The hospital is equipped to care for all types of medical and surgical conditions and to feature the use of the federal government's own famous radio-active thermal waters. Colonel James D. Fife is Commandant. The equipment of the institution like the hospital is the last word in scientific advancement.

The hospital, a reinforced concrete structure, veneered with light face brick is trimmed with limestone, terra cotta and embellished with ornamental aluminum and bronze. The central tower section, 12 stories or 197 feet high, is surrounded by an 8-story head-house, 40x120 feet. There are three 6-story wings, one in the center directly back of the tower 50x130 feet; a right and left, each 40 feet wide, 250 feet long. The side wings are topped with heliotherapy decks and shelter pavilions.

The capacity of the hospital is 412 beds but by utilizing the glass enclosed porches adjacent to the wards can be increased to 600 beds.

One whole floor equipped with the last word in baths, vapor cabinets and pool has been devoted to the administration of hydrotherapy, featuring the use of Uncle Sam's boiling medical waters from which the 100-year old national park takes its name.

Physiotherapy and occupational therapy facilities are also available, and the surgical section is said to be one of the most complete in the United States.

A $158,000 nurses' quarters will be ready for occupancy by December. Other improvements in connection with the hospital include 27 sets of officers' quarters, new quartermaster, utility and recreation buildings and $60,000 worth of road work.

The new hospital replaces 169 bed capacity institution built by the War Department in 1882.

The Battle of the Little Big Horn

A Tactical Study

By Colonel T. M. Coughlan, U. S. A., Retired

PART I

THE success or failure of any combined undertaking is almost entirely dependent upon the manner in which each of the participants carries out his part of the plan of operations.

Briefly, the main cause of war between the troops and the Indians was the continuous and ever increasing encroachment of the whites upon the hunting grounds of the Indians.

In 1868 the government concluded a treaty with the Sioux Nation, setting off a large territory in the northwest, including the Black Hills of Dakota, their favorite hunting ground, to be their own forever. Establishment of military posts without the consent of the Indians caused massacres at Forts Steele and Phil Kearney and the annihilation of Fetterman's command. Then came the discovery of gold in the Black Hills (1874), with the inevitable resulting inroads of covetous settlers. Great unrest prevailed among the Indians at this invasion of their territory. Hunting parties (ostensibly) were organized for the purpose of attacking settlers. Toward the close of 1875 the Indian unrest alarmed the Indian Department. The War Department was authorized by the President to chastise some of the warlike tribes encamped not far from their reservations, ostensibly for hunting purposes but in reality to organize war parties for depredations in the spring.

General Terry, Commander of the Department of Dakota, and General Crook, Commander of the Department of the Platte, through General Sheridan, were, on February 8, 1876, instructed to organize large commands for the purpose of pursuing and punishing all Sioux found away from their reservations.

Crook, pursuant to these instructions, with a force of over 1,000 men, comprising fifteen companies of Cavalry and five companies of Infantry, left Fort Fetterman on May 29, 1876, and on June 17th encountered Crazy Horse with a strong force near the headwaters of the Rosebud. Here Crook received a sound thrashing and, although maintaining possession of the battlefield, deemed it advisable to retrace his march to the camp of his wagon trains on Goose Creek and await reënforcements. This Indian band of about 1,500 warriors under Crazy Horse was only part of the force encountered by Custer a week later. After his fight with Crook on the Rosebud, Crazy Horse withdrew and joined Sitting Bull on the Little Big Horn.

The reference to Crook's encounter with Crazy Horse on the Rosebud is noted merely to show that, if there had been any idea by higher authority of coöperation in this campaign between the columns of Crook and Terry, the attempt failed miserably. The Rosebud fight took place a week before and but a scant fifty miles from Sitting Bull's camp on the Little Big Horn, but Terry heard nothing of it for several weeks and then too late to avert the disaster.

PART II

It is apparent that, upon receiving instructions from General Sheridan, on February 8, 1876, Terry immediately began formulating his plan of campaign. This was not, as is generally supposed, Custer's expedition. It was Terry's. It is time now to clear up this point and to inform the service generally of the utter dependence of Custer's immediate battle upon the strategic plan of Terry, to whom Gibbon and Custer were the lieutenants or co-workers in the fulfillment thereof. There were necessarily two phases: first, the strategical maneuver planned by Terry and second, the tactical movements of Custer when immediately confronted by the enemy.

Aware of the growing strength of the Sioux and realizing the necessity of an adequate force with which to carry out his instructions, Terry, as early as February 16th, wrote Division Headquarters requesting that the three companies of the 7th Cavalry then serving in the Department of the Gulf be ordered to rejoin their regiment in his department. And again, on March 24th, he telegraphed Sheridan, urgently asking for the troops in Louisiana, adding: "The most trustworthy scout on the Missouri recently in hostile camp reports not less than two thousand lodges* and that the Indians are loaded down with ammunition." About two months later and when on the eve of starting, Terry telegraphed Sheridan from Fort Lincoln: "It is represented that they have 1,500 lodges, are confident and intend making a stand." From the foregoing two telegrams alone, it is apparent that Terry realized the strength and efficiency of the hostile force and, from an ordinary estimate based on the number of lodges, that he would encounter a warrior strength of from 4,500 to 6,000, with which he was to oppose the combination of Gibbon's 400 and Custer's 600.

It is hardly reasonable to suppose that in the gradual building up of his plan of operations he did not keep Gibbon and Custer apprised constantly of the many authoritative reports of the hostile strength or that he considered sending Custer's command alone into battle against this formidable hostile array. Also in view of Terry's expression of the hostile strength, how is it possible that Custer could have so underestimated their

*The ordinary estimate of the inhabitants of an Indian village was three fighting men or from 12 to 15 individuals to the lodge.

number as to believe that he would be confronted by only 1,500 warriors at his (Custer's) maximum estimate?

In accordance with Terry's plan the movement of his two columns began early. Gibbon with six companies of the 7th Infantry left Fort Shaw, Montana, in the latter part of March; four companies of the Second Cavalry left Fort Ellis, Montana, on the first of April. Ninety-seven miles from Fort Ellis these two columns united under Gibbon's command and proceeded east on the Yellowstone beyond the mouth of the Tongue River where, on June 9th, it doubled back on its trail, arrived and took position opposite the mouth of the Rosebud on the 13th and 14th of June.

Custer, with the entire 7th Cavalry, three companies of Infantry (guard for wagon train), one platoon of Gatling guns, and 40 Arikara (Ree) Indian Scouts left Fort Abraham Lincoln, Dakota, on the 17th of May and proceeded west with the mouth of the Powder River as the general objective. General Terry accompanied this column.

On June 10th Major Reno was detached from the camp on the Powder River with six companies of the 7th Cavalry to scout the Powder River Valley as far up as the mouth of the Little Powder, thence west to the Mizpah, down that stream to its mouth and down the Tongue to its confluence with the Yellowstone, at which point he would then find General Terry with the balance of the command. After making this scout in which, contrary to orders, he included the Rosebud, Reno arrived at the mouth of that stream on June 17th. No Indians had been seen, but a large trail had been followed up the Rosebud for about forty miles.

Custer, at this time, was in camp with the balance of the 7th Cavalry at the mouth of the Tongue River awaiting the report of Reno's scout and, on the night of June 20th, bivouacked with Reno.

Terry, having early learned of the result of Reno's scout, practically completed his plan of operations and on the morning of June 20th went to Reno's bivouac where, after collecting all available information, the measures to be taken were discussed and the plan in its general features determined upon. Custer was told that afternoon of the work laid out for him, and he was cautioned to husband the forces of his men and animals. The same evening, leaving Custer to bring up his command, Terry proceeded up the Yellowstone on the steamer *Far West*, reaching Gibbon's camp, which was nearly opposite the mouth of the Rosebud. Before noon of the 21st of June Gibbon's column was put in motion up the north bank of the Yellowstone, pursuant to Terry's plan, within an hour after the latter had arrived and before Custer's command had reached the mouth of the Rosebud on the south side. Thus it will be seen that Gibbon's troops were measuring the road to the mouth of the Big Horn according to the "plan," before Custer, who was marching with his command, could possibly take part in the conference.

From the foregoing it should be clear that Terry had now formed his plan in its detail; that Gibbon's force had been dispatched west in accordance with that plan, and that there remained now but to instruct Custer as to his future action in the joint maneuver. This was imparted to the latter and fully explained to both Gibbon and Custer at the conference of Terry, Gibbon and Custer late on the afternoon of June 21st aboard the steamer *Far West*. (Major J. S. Brisbin, commanding the 2nd Cavalry battalion, was present at this conference.) At this conference Custer was offered the 2nd Cavalry battalion and Low's platoon of Gatling guns but declined, because he felt that he had a sufficient force without the 2nd Cavalry and that the platoon of Gatling guns would impede his march.

After the close of the conference, Low's platoon was ferried across to the north bank to overtake and join Gibbon's column, and Scouts George Herendeen, Mitch Bouyer and several Crow scouts were carried to the south side to go with Custer. Herendeen was sent with Custer by Terry for the express purpose of communicating with Gibbon's column upon the result of the examination of the upper part of Tullock's Creek.

The gist of the plan as already stated was to direct the movements of the two columns in such a way that if the Indians fled they could not escape to the southeast without being driven upon Crook; they could not go westward because they were already near the eastern bank of the Big Horn River (then in flood) and the eastern boundary of the territory of the Crow Nation with whom they were at open hostility; northward they would be met by Gibbon, and to the southward lie the Big Horn Mountains, in which they could not maintain themselves for any considerable time if they once permitted themselves to be cooped up therein.

If they made a stand, the purpose is clearly set forth in Terry's report; Custer was to keep on southward (after determining where the trail led) for the double purpose of intercepting flight, should it be attempted, but above all to so maneuver his strategic column as to give time for Gibbon's column to come up.

This plan was formed on the belief that the two columns might be brought into coöperating distance of each other. Or, as Gibbon states it in his letter of November 6th, "I saw Custer depart on the 22nd with his fine regiment fully impressed with the conviction that our chief aim should be to so move that whatever force might be on the Little Big Horn should not escape us. . . . And it was fully understood between us that to give my troops time to get up and to guard against escape of the Indians to the south, he should keep constantly feeling to his left."

And again, the definite plan which was given to Gibbon and Custer was based on Reno's discoveries and on

the stated opinions and known facts of such experienced Indian scouts as Bouyer, Reynolds, Girard and others who were with him. It contemplated a joint or combined operation of the two columns—not independent movement—and what the final event showed to be of more consequence than all other features, it contemplated taking no chances of defeat by attacking known superiority of force by insufficient means. Recollect here that by the ordinary computations of warrior strength of the two estimates by Terry between the months of March and May, the Sioux had between 4,500 and 6,000 fighting men.

In addition to the definite explanation (already well understood by Custer through the conference held during the afternoon of June 21st) of the coöperative movements of Gibbon and Custer, the following are General Terry's written instructions to Custer:

Camp at mouth of Rosebud River, Montana Territory.

June 22nd, 1876.

Lieutenant-Colonel Custer,
7th Cavalry.

Colonel:

The Brigadier-General Commanding directs that, as soon as your regiment can be made ready for the march, you will proceed up the Rosebud in pursuit of the Indians whose trail was discovered by Major Reno a few days since. It is, of course, impossible to give you any definite instructions in regard to this movement, and were it not impossible to do so the Department Commander places too much confidence in your zeal, energy, and ability to wish to impose upon you precise orders which might hamper your action *when nearly in contact with the enemy. He will, however, indicate to you his own views of what your action should be, and he desires that you should conform to them unless you shall see sufficient reasons for departing from them.*† He thinks that you should proceed up the Rosebud until you ascertain definitely the direction in which the trail above spoken of leads. Should it be found (as it appears almost certain that it will be found) to turn towards the Little Horn, he thinks that you should still proceed southward, perhaps as far as the headwaters of the Tongue and then turn towards the Little Horn, feeling constantly, however, to your left, so as to preclude the possibility of the escape of the Indians to the south or southeast by passing around your left flank. The column of Colonel Gibbon is now in motion for the mouth of the Big Horn. As soon as it reaches that point it will cross the Yellowstone and move up at least as far as the forks of the Big and Little Horns. Of course its future movements must be controlled by circumstances as they arise, but is hoped that the Indians, if upon the Little Horn, may be so nearly inclosed by the two columns that their escape will be impossible.

The Department Commander desires that on your way up the Rosebud you should thoroughly examine the upper part of Tullock's Creek, and that you should endeavor to send a scout through to Colonel Gibbon's column, with information of the result of your examination. The lower part of this creek will be examined by a detachment from Colonel Gibbon's command. The supply steamer will be pushed up the Big Horn as far as the forks if the river is found to be navigable for that distance, and the Department Commander, who will accompany the column of Colonel Gibbon, desires you to report to him there not later than the expiration of the time for which your troops are rationed, unless in the meantime you receive further orders.

Very respectfully, your obedient servant,

E. W. Smith,
Captain, 18th Infantry,
Acting Assistant Adjutant General.

The character of Terry's instructions are positive and clear as to the strategical maneuver but avoid definite directions to his two subordinates as to the tactics employed when immediately confronted by the enemy.

From the foregoing, to an open mind, it must be apparent that Terry had a well defined plan—that he communicated this plan to his two subordinates, Gibbon and Custer, before their departure from the mouth of the Rosebud—that this plan was fully understood by Gibbon and Custer in joint conference—that, due to the various reports of hostile strength, it contemplated a combined coöperative movement, and that there was no idea in Terry's mind of either Gibbon or Custer attacking the hostile force alone, and that this belief was positively and clearly communicated by Terry to his two column commanders and understood and accepted by them in the joint conference at the mouth of the Rosebud on the afternoon of the 21st of June.

PART III

Gibbon's column was now on its way to the mouth of the Big Horn. Custer with the entire 7th Cavalry left the mouth of the Rosebud at noon, June 22nd, and proceeded up that stream, following the trail discovered by Reno. The command went into camp about 4:00 p. m., after marching twelve miles. The next day the command camped after marching about thirty-three miles. At some point during the march of June 23rd, or possibly the 24th, it was observed that the Indian trail diverged from the Rosebud and led west toward the Little Big Horn. Custer followed it. Hark back for a moment to Terry's written instructions: "Should it be found (as it appears almost certain that it will be found) to turn toward the Little Horn, he thinks that you should still proceed southward, perhaps as far as the headwaters of the Tongue, and then turn toward the Little Horn,

†The italics are my own.—T. M. C.

feeling constantly, however, to your left, so as to preclude the possibility of the escape of the Indians to the south or southeast by passing around your left flank," and again, "He will, however, indicate to you his own views of what your action should be and *he desires that you should conform to them unless you shall see sufficient reasons for departing from them.*"‡

If there existed any possible military reason for Custer's departure from Terry's instructions at this time, it has not been brought to light. There was none. He was not nearly in contact with the enemy. Then, why the departure? What the motive? We may look elsewhere for motive, but this article deals only with facts as they appear, and on Custer's subsequent actions and orders under Terry's instruction is this study undertaken.

What were the consequences of this wilful disregard of Terry's instructions?

1st. Disloyalty to his chief, who, toiling along with Gibbon's column, was in absolute ignorance of this violation of the plan by a trusted member of the team.

2nd. Neutralizing or putting Gibbon's command entirely out of the field of action.

3rd. By thus ignoring Terry and Gibbon and electing to go it alone, he saddled on his own command a greater task than the hitherto difficult one, and by this act placed the brunt of responsibility for the future outcome entirely upon his own shoulders. The primal cause of the disaster is here.

Custer's command was now approaching Tullock's Fork. He was ordered (and in this no discretion whatever was given him) on his way up the Rosebud to thoroughly examine the upper part of Tullock's Creek and endeavor to send a scout through to Gibbon's column with the information thus obtained. Here was an excellent opportunity to inform Terry of the radical change made by him (Custer) in the plan and to acquaint Gibbon with his location and movements tending to further future coöperation. Scout Herendeen sent with Custer for no other object than to carry dispatches through to Gibbon via the Tullock was not made use of. The Tullock itself received scant notice. Lieutenant Varnum (now Colonel, retired) who was in command of all the scouts and necessarily familiar with all the duties required of them and what they did, says that in all his instructions from Custer in regard to scouting he never even heard of Tullock's Creek but was instructed to devote special attention to the opposite side, and that if any examination whatever was made of the Tullock valley it was made without his knowledge and by someone not under his control. No one has been found who made such examination, and the fact that no attempt was made to send Scout Herendeen through to Gibbon's column is conclusive that this part of the order was absolutely ignored.

Following the Indian trail which the scouts reported leading across the divide and into the valley of the Little Big Horn, Custer resumed his march again on the 24th shortly after 9:00 p. m. A halt was called at 2:00 a. m., June 25th, after the command had proceeded about 10 miles toward the divide. In the meantime Lieutenant Varnum with the scouts had gone to the Crow's Nest for observation, at dawn, of the Little Big Horn Valley. Varnum then sent word to Custer that the village had been located. Shortly after 8:00 a. m., the regiment moved forward, and Custer himself hastened ahead to the Crow's Nest in order to confirm the report sent by Varnum. The regiment, having advanced within a short distance of the divide, halted again and here Custer, returning from the lookout, called his officers together. He told them that the Indian scouts said the village was ahead, in the valley of the Little Big Horn; that he had not been able to see it himself and doubted that it was there, but that Mitch Bouyer the half-breed chief of the Crow scouts, had told him that he could see it plainly, some fifteen miles down the valley. Bouyer also told Custer at this time it was the largest village that had ever collected in the northwest and that he, Bouyer, had been with those Indians for over thirty years. This was after he had shown Custer the enormous pony herd from the Crow's Nest and before he, Custer, had divided his command.

From the heights of the Crow's Nest, Varnum and his scouts made their inspection of the valley shortly after dawn. Had Custer, through his glasses, peered down the valley at this time instead of waiting until nearly noon when distant vision was more or less obscured and distorted by summer heat, he would undoubtedly have satisfied himself as to the unprecedented size of the Indian village which it is certain he was made aware of by his trusted and experienced Indian scouts. If the latter's advice was not to be heeded, why burden the command with their presence?

Near the noon hour of the 25th, Custer led his regiment across the divide. It is alleged that here, realizing from the discovery of watchful Sioux scouts that further concealment was useless, Custer decided to strike as quickly as possible.

If the Sioux managed to impose scouts on the flanks and rear of Custer's column at this distance from their main body, it is not understood why the latter failed to at least equal the Indians in advance reconnaissance with his aggregation of over sixty Ree and Crow scouts, guides and interpreters.

He divided the regiment into three battalions, assigning one of three companies to Major Reno, another of three companies to Captain Benteen, and retaining the third of five companies under his own command. The remaining company was told off as escort for the pack train, which with its escort accounted for more than 20% of the regiment.

At about 12:15 p. m., Custer ordered Benteen with his battalion (approximately 125 men in all) to proceed to the left, scout the bluffs about three or four miles distant,

‡The italics are my own. — T. M. C.

"to pitch into anything he might find" and report to Custer. Twice during the first few minutes of his march Benteen received amendatory orders which directed him, in case he found nothing, to go on in the same direction to the valley beyond and, if he still found nothing, to the next valley.

For this detachment of Benteen there is no apparent justification. The broad trail of the Sioux did not diverge here. Was he not informed by one of his best scouts that the largest village that had ever been collected in the northwest lay in the opposite direction to which he was sending Benteen? No hint of a battle plan or scheme for future coöperation was given to Benteen and no provisions made for future communication with the main body. The regiment, already believed by Terry inadequate (without Gibbon) to cope with the Sioux horde, was now further crippled by the irrevocable loss of one-fourth of its available combat strength. Note that Company B, augmented by one N.C.O. and six men from each of the other eleven companies and totaling 130 men, was escort for the pack train.

One authoritative writer states that the division of the command was not in itself faulty; that the same tactics were pursued at the battle of the Washita and were successful; that the latter was a surprise attack and there was full coöperation of the separate commanders. This point is disputed. At the Washita (1868) the division of the command was made after midnight of the night before the dawn attack, and the subdivisions were so closely situated that easy communication and full coöperation were readily available. The Washita fight, however, was not without its costly reconnaissance lesson to Custer, as when fully committed in action against Black Kettle's force in his immediate vicinity, the avalanche of hostiles from villages down the river and of whom he had no knowledge caused him to withdraw and beat a hasty retreat to his wagon train, a distance of over thirty miles. In this action Major Elliot with a detachment of nineteen men, conducting a reconnaissance, was cut off and wiped out.

Benteen was now lost from view, and the balance of the command continued its march down Sundance Creek toward the Little Big Horn, Reno on the left and Custer on the right. Shortly after 2:00 p. m., the lone tepee was sighted and passed. A heavy dust cloud was seen apparently some five miles distant. From the top of the knoll, Interpreter Fred Girard saw between the troops and the river a party of some forty Sioux apparently in flight. He turned in his saddle and shouted to Custer, "Here are your Indians running like devils." Instantly Custer ordered the Indian scouts ahead in pursuit but they refused to go. (Did these Indians instinctively know the facts?)

Reno was just coming up at the head of his battalion. Cooke rode to him and said: "General Custer directs that you take as fast a gait as you deem prudent and charge afterward and you will be supported by the whole outfit." Reno interpreted this order to mean that the balance of the regiment would act in close coöperation with him—that his (Reno's) battalion would be the advance guard for Custer and his five companies. He interpreted this order to mean that the balance of the regiment (less Benteen's battalion) would act in close cooperation with him and not at a far distant point. He was not only justified in that interpretation but doubtless such was Custer's intention when he gave the order. The phrase "supported by the whole outfit" here could not possibly include Benteen's battalion, which had left the main column two hours before and was now probably eight or ten miles to the left and rear, whose position could at best be only approximated, absolutely beyond coöperating distance, and whose indefinite orders contemplated no coöperation with any other part of the regiment. When Benteen was sent away no village had been definitely located; no force of Indians had been seen; and there neither was, nor could have been at that time, any definite plan, either of approach or attack, in Custer's mind, despite assumptions of certain writers to the contrary.

As it was with Benteen, so it was with the detachment of Reno. No plan was mentioned. Custer's information of the enemy at that moment was insufficient for him to have formed a plan. He gave Reno no other instructions, and no further word was ever received from him by Reno, who went in apparently expecting Custer to follow and support him from the rear.

Upon receipt of his orders Reno made the three miles to the river at a sharp trot and crossed about 2:30 p. m. Custer followed at a slower gait, being some three-quarters of a mile behind when Reno's advance guard reached the stream. Cooke, the adjutant of the regiment, and Keogh, commander of I Company, rode to the river with Reno's column. There, Keogh and Cooke turned back to rejoin Custer. Reno soon found that the Sioux, instead of running away, were streaming up the valley in heavy force to meet him. Interpreter Girard, knowing that Custer believed the enemy in flight, galloped back on the train, overtook Cooke, the adjutant, and gave him this information. Cooke answered that he would at once report the fact to Custer, who up to this time was still following Reno. Whether Cooke did so report, of course, no man can say, but it must be assumed that he did and within a very few minutes after 2:30 p. m.

Here, Custer was confronted with two phases diametrically opposed in the immediate situation. He had already committed Reno to action in the belief that the Indians were running away and apparently followed Reno with the idea of immediately supporting him. A few minutes later he was informed that the enemy was advancing against Reno in heavy force and he (Custer) changed his direction to the right, ascended the bluffs and moved north paralleling the stream.

While there is no record of Custer's reasoning at this time, it is logical to suppose that his change in direction of march was decided upon in order to strike the enemy in flank or rear, as from the viewpoint of time it is manifestly easier to flank an advancing enemy than one who is retreating.

Reno crossed the stream, halted and reformed his command. Then, sending an orderly to Custer with the message that he had the enemy in force in his front, he trotted down the valley in line of battle, fully expecting Custer to be in his immediate rear. Twice before he halted, he had sent messages to Custer to tell him that the Sioux were there in force, but no word had come from his chief since the order to attack was given.

Good faith is as necessary a requirement in the senior as the junior, and if it be found impossible to fulfil promise of support in an emergency, at least the junior or subordinate should be informed and in proper season. This is but an age-old principle of coöperation. With every opportunity to do so, Custer failed to acquaint Reno with this sudden and variant change in his expressed intention to support Reno's attack.

Had Custer informed Reno to expect no support from the rear but elsewhere, Reno might have remained longer in the bottom waiting for the attack that did a little later draw the foe from his front as he gained the bluffs. It is apparent that Custer was singularly negligent in linking up his separate battalions.

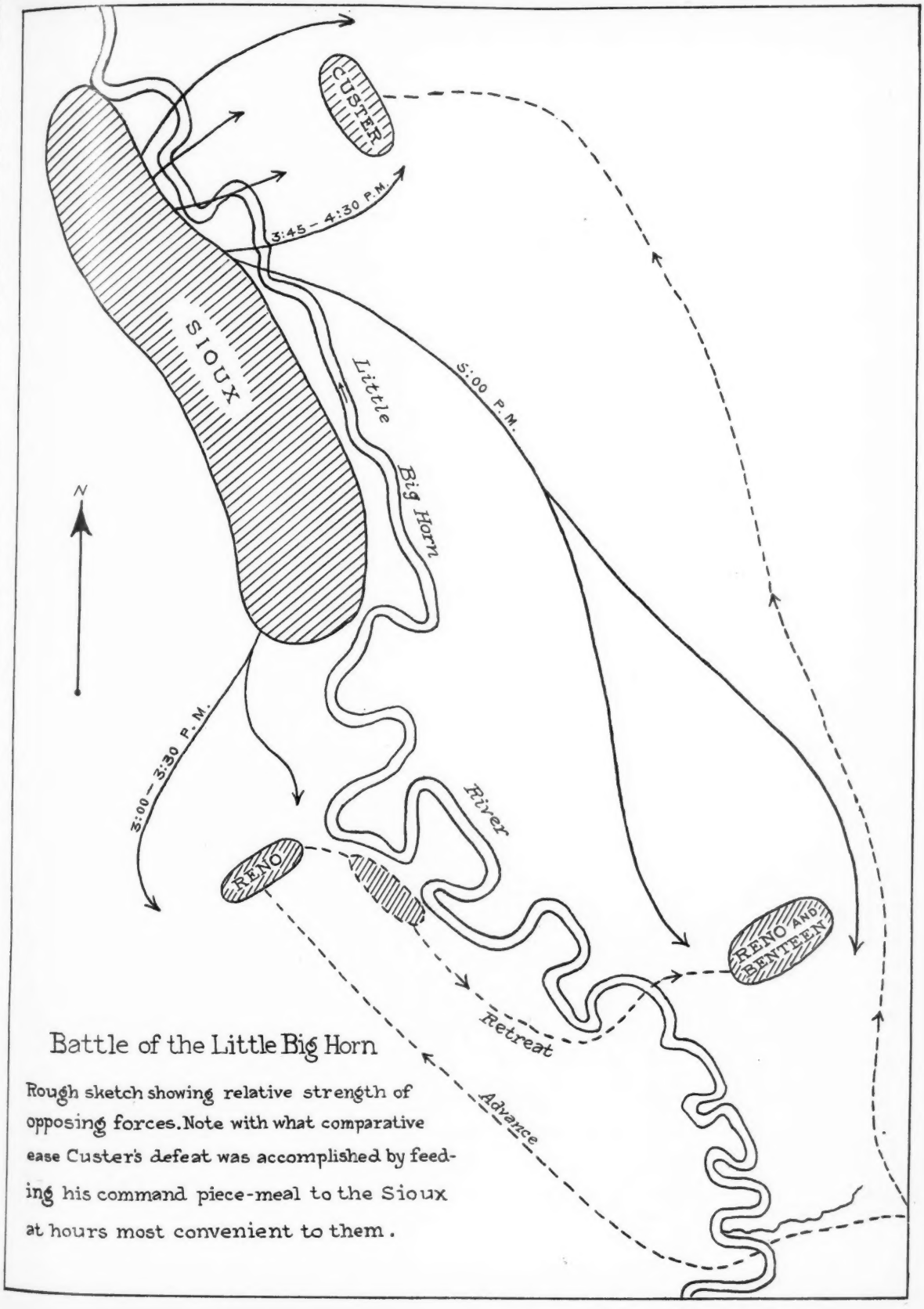
When Reno's fight in the valley began, not one of the three fighting battalions had ammunition sufficient for prolonged combat nor was within communicating distance of the reserve supply, nor was any one of the four detachments of the regiment within supporting distance of any of the others. Not only were all separated by miles of difficult and enemy infested country but no one of the commanders, Custer, Reno, Benteen, or McDougall, knew where any of the others were or what he was doing. Custer, the commander, by actively commanding a part of his force, lost control over the greater portion of his command. This unfortunate separation and, as it proved, fatal ignorance of one another's acts and whereabouts, gave to the Sioux, whose horde outnumbered the soldiers at least six to one, every opportunity to beat them in detail; opportunities of which they promptly and thoroughly availed themselves.

It is hardly necessary to recount Reno's fight in the valley and subsequent retreat. Reno has been bitterly criticized for what he did. Custer, and not Reno, however, was responsible at the outset, or first phase, for the present situation. Reno was attempting to make the best of a desperate situation brought about by Custer's disregard of Terry's instructions. Reno was not a free agent. In the second phase he expected the support of the "whole outfit" and departed apparently whole-heartedly on his mission with a handful of men in the face of that determined, savage horde. Suppose he had charged Custer-like through the village as many critics say he should have done? What would have been the outcome? This is adequately answered by the testimony of Hare, Varnum and others at the Reno inquiry—his command, a mere handful would have melted away like the summer snows. As it was, his action, whatever it may be termed, was responsible for the temporary saving of the lives of the balance of his battalion, aided and secured by the providential return of Benteen, whose subsequent leadership stood between utter destruction and the safety of the two united detachments.

During Reno's attack and subsequent retreat, Custer, with his five companies had been marching north on the bluffs east of the river. As there were no survivors, conjecture is the only fitting word to a description of what took place in his subsequent encounter with the Sioux. Reno crossed the river at 2:30, he attacked about 3:15, fought in the valley about half an hour and then retreated, reaching the bluffs about 4:00. Benteen joined him about 4:10. It must have been at least 5:00 or later before the ammunition mules arrived. What was Custer's situation then? He had left Reno's trail about 3:00; he started Trumpeter Martin back about 3:15; he had been first attacked, according to Martin, about 3:20. It was now after 5:00, more than an hour and a half since the Indians had first fallen upon him. Chief Gall had left Reno's front about the time Reno withdrew his line into the timber, or 3:30. He had not more than a twenty-minute ride to Custer, which allows more than an hour of his participation in the attack, before Reno had the extra ammunition.

While Hare was gone for the ammunition mules, Weir and his company moved down the river in an attempt to communicate with or join Custer. He had succeeded in getting about a mile before he was compelled to stop because of the ever increasing number of Sioux in his front. In the meantime Reno was on the way to join him. Before Reno reached Weir the struggle below was over, and the Sioux were coming back. Weir had moved down the river about 4:30 to 4:45; Reno followed about 5:30. The Indians checked Weir about the time Reno started, and the retreat up the river to his first position began about 6:00. By 6:30, most of the command was back on the hill; by 7:00, all of it and, as the covering company (Godfrey's) made its last dash to safety, Reno was surrounded by thousands of yelling Sioux.

The foregoing chronology of events and movements is the best that has been suggested and is generally accepted. Could Reno have accomplished anything had he moved down the bluffs immediately upon his arrival from the bottom and upon being joined by Benteen? For answer, and from a consultation of the chronology of events, the following is deduced: The fighting strength of the Sioux that day was at least six to one; better armed, better prepared and as well, if not better, led; no finer mounted infantry existed. Whereas Custer proba-



Battle of the Little Big Horn

Rough sketch showing relative strength of opposing forces. Note with what comparative ease Custer's defeat was accomplished by feeding his command piece-meal to the Sioux at hours most convenient to them.

bly believed that *all* the Sioux were speeding to attack Reno in the valley, the greater part of the Sioux had *not* gone to meet Reno but before Trumpeter Martin was out of sight (shortly after 3:20 p. m.) attacked Custer from the ravine which led to the ford in such numbers as to force him farther down the river than he intended to go. And there, struck again on the south flank by Crazy Horse and again on the north flank by Chief Gall, who had charged south from Reno's front at 3:30 p. m., Custer, opposing this mass of three or four thousand Sioux with his handful of two hundred and fifty, was hemmed in and, no later than 4:15 p. m., doomed to destruction, if not already done for.

Consider, now, Reno's plight. He reached the bluffs at about 4:00 p. m., having lost in killed, wounded and missing nearly half his battalion; his entire command (including himself) in a state of demoralization resultant from such losses; short of ammunition and burdened with wounded. Benteen joined him about 4:10 p. m., after a gruelling march beginning the night before; Benteen had to share his ammunition. It was four miles to Custer. The ammunition mules did not arrive until five o'clock.

In the face of these fearful odds, neither Reno nor any other average soldier could have accomplished anything. The daring, dashing and courageous Custer would have failed under these conditions as he had failed in his fateful and futile attempt to take the Sioux in flank or rear.

What would have happened had the regiment been held together? This is well answered in General Sheridan's official statement on the subject: "Had the Seventh Cavalry been kept together it is my belief it would have been able to handle the Indians on the Little Big Horn, and under any circumstances it could have at least defended itself; but separated as it was into three detachments, the Indians had largely the advantage, in addition to their overwhelming numbers."

What would have happened if Terry's plan had been followed to the letter? This question is not fairly nor sufficiently answered by repeating the worn-out platitude that the Indians would have escaped. The conjecture that they would have stood and fought in this case is just as fair and logical. What if it is claimed that it was habitual to flee in the face of a strong force (which is not true)? The pitcher goes to the well once too often. This was the red man's day. He knew the white strength as well as the magnitude and efficiency of his own. He was justly elated over the recent victory of a sub-chief over Crook's superb force. He was encumbered with women and children whom he knew to be an easy prey to Custer's cavalry. He probably knew, too, of Gibbon's approach and that if he fled to the Big Horn Mountains, his only avenue of escape, he could not remain there and survive. No! The surmise that he would have stood and fought under the troop maneuver of Terry's plan is just as reasonable as the conjecture of flight.

The tactics of the Indians on that day resulted in their doing to Custer exactly what Custer had intended to do to them. They were able to do it because they had the leaders, the arms and the overwhelming forces, none of which facts were known or, if known, not appreciated by the 7th Cavalry. (See graph attached exemplifying the costly error of division of force in the face of the enemy, with its disastrous consequences.)

To me, the finale was meaningly sardonic. Custer was evidently under the delusion that the Indians would try to escape. The Sioux not only escaped but, after killing Custer and his five companies to a man, leisurely and with savage dignity, put their immense cavalcade in motion with Reno shivering on the one side and Terry, uncertain, on the other.

In all history, there is no such record of savage victory over trained troops.

He will be ever remembered as the dashing, daring and courageous Custer, who died a hero with his men, but as far as his observance of tactics or strategy at the battle of the Little Big Horn is concerned, the book is closed.

CAUSES OF THE DISASTER

The disaster of the Little Big Horn was the legitimate result, not only of the great superior strength and armament of the enemy, but of a planless battle—in many places, badly fought. The Indian triumph was not due so much to the general superiority of the red man as to the lack of generalship on the part of the whites. The victory was handed to the Indian on a silver platter.

In detail, my opinion is as follows:

1. *First Phase:* The primal cause and the one for which the responsibility rests entirely on Custer's shoulders was his disregard of Terry's plan of maneuver and his failure to carry out his part of the bargain. Reno and Benteen were not free agents.

(a) Bringing on the fight thirty-six hours ahead of time.

2. *Second Phase:* After deciding to go it alone, before and after contact with the enemy:

(a) The division of the command into four columns none of which was within supporting distance of any of the others and entirely without inter-communication of any kind. Contrast the action of the contenders, where the Indian beat Custer in detail with almost Napoleonic sagacity.

(b) Absence of a plan of battle.

(c) Lack of any communications whatever.

(d) Inadequate reconnaissance.

(e) Underestimating strength of enemy.

(f) Custer's actively commanding a part of the force, thereby losing control over the greater portion of his command.

(g) Failure to keep his promise of support to Reno and subsequent failure to apprise the latter of the change in his maneuver.

3. *Causes generally attributable to higher authority:*

(a) The defective extraction of empty cartridge shells from the carbines—antiquated armament as opposed to the up-to-date repeating Winchesters of the Indians, issued to them by the government. General Schuyler tells me the Indians reported that many men were killed while vainly endeavoring to eject empty cartridge shells.

(b) The presence in ranks of many inexperienced recruits. Colonel Varnum tells me that in the Reno fight he saw men discharging their carbines in the air and that during the siege, night of 25th-26th June, the officers were busy instructing the men how to aim and squeeze.

(c) Lack of target practice. There had been no systematic instruction. General Schuyler told me that Crook first instituted target practice in the Army after the bitter experiences of the battles of the Rosebud and the Little Big Horn.

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1933 N. R. A. Rifle and Pistol Champions

(Extracts from official release of National Rifle Association, Washington, D. C.)

NEW rifle and pistol champions have been crowned and the numerous trophies of the National Rifle Association, emblematic of the championships, have changed hands for another year, with the riflemen of the services taking the bulk of them.

This was the second consecutive year that the championships of the target range had to be decided in regional or state tournaments, because of the failure of Congress to provide for the usual Camp Perry National Rifle and Pistol Matches. The National Rifle Association had been accustomed to holding its annual title matches during the Camp Perry matches in coöperation with the War Department. When Congress, bowing to its program of economy, eliminated the big meet last year and again this year, the rifle association initiated regional or state shoots for the .30-caliber rifle and the pistol championships.

Thirteen regional or state tournaments were conducted this year, which gave marksmen throughout the country a chance to contest for the trophies. They were held in Alabama, California, Illinois, Iowa, Massachusetts, Michigan, Nevada, New Jersey, New York, Ohio, Rhode Island, and Washington State and at the U. S. M. C. reservation at Quantico, Va. The Marines, Army and Coast Guard coöperated efficiently and willingly at different meets, and their help was a material factor in making a success of the shoots at which they had any part.

The President's Match, which was started in 1901, proved, as always, the most popular of the matches, drawing 750 competitors. The Navy Cup Match was next with 631 entries, and the Wimbledon Cup Match led the remainder of the matches by attracting 601 shooters.

A 23-year-old first-class private in the Marine Corps, George W. Walker, of Terry, Miss., furnished the real highlight of the matches this year by capturing the championships in two of the competitions, the President's Match and the Wimbledon Cup Match. The youthful Marine rifleman shot his scores in the matches held at Quantico, Va.

* * *

To win the President's Match, Walker shot a score of 145 out of a possible 150 points. Sergeant A. O. Coppage, U. S. M. C., who also competed in the Quantico shoot, gave him a close run for the match as he turned in the same score but was outranked. Private R. D. Chaney, another Marine, who fired in the Massachusetts meet at Wakefield, was third, scoring a 145 that wasn't quite so good as Walker's and Coppage's.

The Coast Guard trophy, which is for award to the high Coast Guard shooter in the President's Match, was taken by Ervin Frye, c. m. m., whose 144, fired at Quantico, gave him fourth place. Major S. D. Monahan, O. R. C. of Chicago, who competed in the Illinois matches at Fort Sheridan, won the Reserve Officers' Association trophy for being the highest scoring Reserve Officer in the match. He placed seventh with a 144 score. The Crescent A. C. trophy fell into the possession of E. S. Peterson, U. S. S. Maryland, for being the best shooting Navy competitor, his 143, fired in the Washington State meet at Fort Lewis, giving him tenth place. Second Lieutenant Thomas Donleavey, Massachusetts, who fired at Quantico, was the high National Guard shooter with 143 and thirteenth place, and acquired the National Guard Association trophy. The high civilian, to whom went the Captain Edwin H. Clarke Memorial trophy, was L. E. Wilson, Cashmere, Washington, who did his shooting in the Washington state meet. He was twenty-first on the final-results list. The last of the 100 high in the match was O. C. Conrad, Company C, 17th Infantry, Fort Crook, Neb., but this place was sufficient to out-rival all other Infantrymen for the Farnesworth medal. Conrad, competing in the Iowa shoot, shot a 137 and just managed to attain the "President's Hundred."

Nine of the new champions, considering both individuals and teams, fired in the Quantico shoot; four in the Washington state shoot, four in the Massachusetts shoot, and one each in the California, Iowa and Rhode Island shoots.

Marines outshot their opposition for the championships in the President's Match, Wimbledon Cup Match, Leech Cup Match, the N. R. A. Members' Match, the Marine Corps Cup Match, the Camp Perry Instructors' Trophy Match, the Scott Trophy Match, the Herrick Trophy Team Match and the Navy Cup Match. The Coast Guard came through with victories in the Major Lee O. Wright Memorial Trophy Match, which is the individual grand aggregate; the A. E. F. Roumanian Team Trophy Match, and the Championship Regimental Team Match. The Navy acquired the Coast Guard Rapid-Fire Match title, and the Coast Artillery obtained its one championship in the Crowell Trophy Match. The National Guard had a winner in the .22-caliber Pistol and Revolver Championship. The few remaining matches, rifle and pistol, were divided among civilian and police marksmen.

In addition to the regional and state meets for the national .30-caliber rifle and the pistol championships, the National Rifle Association this year conducted a national small-bore rifle tournament at Camp Perry at which all the championships in the .22-caliber rifle field were settled.

Out of the Grand Canyon on a Litter

By Major Robert P. Williams, M.C., U. S. Army, Commanding the First Medical Squadron

A WINTER camp for the Civilian Conservation Corps in the bottom of the Grand Canyon of the Colorado? Its only means of communication with the outside world, the new Kaibab Trail, five feet wide, averaging 7 per cent grades, with many sharp turns? Is such a camp possible? That was the question that confronted Major General Frank R. McCoy in his capacity of commanding general of the Arizona-New Mexico

The camp-site selected is at Phantom Ranch at an elevation of 2500 feet, where the winter climate is delightful. The ranch is reached only by the Kaibab Trail, built to accommodate sightseers on mule-back. Starting to the east of the El Tovar Hotel, where the South Rim is 7,000 feet above sea level, it turns and twists for seven miles down into the canyon and across the raging Colorado River by the suspension bridge, where the camp lies on a little plateau. Would it be feasible to station several hundred young men in such an inaccessible location, connected to civilization by such a slender thread as that trail? The men could reach Phantom Ranch on foot or mule-back, just like the tourists. They could be supplied by pack train. But how could sick or injured boys be evacuated to the National Park Hospital on the South Rim?

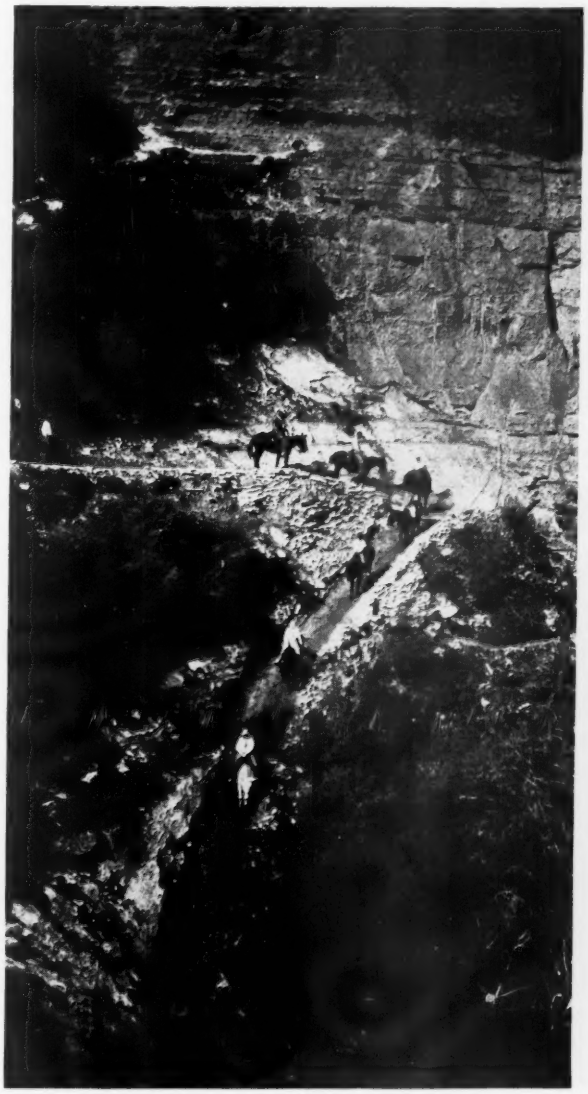
The First Medical Squadron was directed to study the problem, to recommend methods of evacuation and to arrange a demonstration showing the practicability of the methods recommended.

Airplanes could not be used as there are no landing fields in the canyon. Ambulances, including experimental light-weight models and litter carts (see King and Williams "Medical Department in the First Cavalry Division Maneuvers," *Cavalry Journal*, March-April, 1932, and *Military Surgeon*, March 1932) were too long to negotiate the sharp turns. The same objection applied to the travois, and the cacolet (balanced litters on each side of the pack animal) was too broad. With material available three methods of evacuation remained.

A mountain trail on the eastern slopes of Mount Franklin was used for the demonstration. Its maximum grade was 13 per cent, affording a good comparison with the Kaibab Trail.

The first method was by hand carriage litter. This was shown to be comfortable and safe for the patient. Four bearers could be used on the wider parts of the trail, but in going around corners two bearers only were possible. As many relief bearers could be used as were thought necessary. Considering that the distance to go will be seven miles, the first part of which is ordinarily quite warm and the last mile or so is at an altitude of more than 6,000 feet, it was estimated that using bearers in relays, the trip could be made in from seven to twelve hours.

Since hand carriage is most fatiguing and very slow, the next step logically was to support the litter on wheels and have the bearers push or pull it, rather than carry it. The collapsible field litter carrier (item 99185 in the Medical Supply Table) was used. This consists of two light wooden wheels, with flexible carriage springs. Two Medical Department enlisted men, using their new type individual equipment as harness, furnished the tractive power while a third man steadied the rear handles and guided the litter. This method meant a great economy of bearers, and, with much less fatigue, speeded up the evacuation rate to approximately two miles per hour, or 3½ to 4 hours for the trip. It was a simple matter to



Tourists on the Grand Canyon trails. Mules are used; they are safer than horses. The sharp turns make the use of ambulances or even litter carts impossible in evacuating patients.

substitute a mule to do the pulling, the men at the forward end of the litter serve as brakes, pick up the slack in the tow rope when negotiating corners, and can instantly release the mule in case of trouble. The field litter carrier weighs only 67½ pounds, to which should be added the weight of patient and litter. This proved light work for the mule who averaged 2½-3 miles per hour, a total of less than three hours on the trail. The patient was comfortable, but the solid tires did not cushion him against the jolts from loose rocks and even pebbles.

The third method utilized the Phillips pack saddle and a special litter that has given excellent service in the First Medical Squadron for the last six months. A light steel hanger, weighing 41½ pounds is attached to the pack saddle and supports the litter. The litter weighs 19½ pounds and is made of canvas and light metal tubing, so bent that the patient is semi-reclining with his back parallel to the mule's neck and his buttocks almost touching the saddle. The patient is secured to the litter by two wide canvas bands which may be instantly released. For the long trip three mules, working in relay, should be used. Two men are required to load or unload. While in transport they walk by the rear of the litter, steadying it. This is the most comfortable of the single pack litters. The patient may be wrapped in blankets or raincoats for protection from the weather. It is light work for the mule and no more fatiguing for the men than walking. It is perfectly safe as long as the mule keeps his footing, and the patient can be removed almost instantly when necessary. The rate of evacuation is the same as that of the mule-drawn wheeled carrier. Mules from the pack train were used for this litter.

For evacuation up the Kaibab Trail all three of these methods are safe and comfortable. Because of comfort for the patient and ease and speed in rate of evacuation, the field litter carrier is favored for this work. One minor change greatly increased the patient's comfort—that was the substitution of motorcycle wheels for wooden ones with solid rubber tires.

So much for the Kaibab Trail. But it must be remembered that the C.C.C. in the canyon are there for work. They will not spend the winter sitting in their camp, waiting patiently to become sick so that they may be put on a wheeled litter and hauled up the trail. It is understood that their principal duty will be the building of new trails and the repair and maintenance of existing ones. Hence the boy who is hurt or taken sick may be miles from camp with no trail over which to bring him in.

To demonstrate evacuation over difficult grades, the pack litter and hand carriage litter were sent over a small hill with 30-40 per cent slopes, in other words as steep as man or mule could secure safe footing. On steep slopes the wheeled litter carrier was considered unsafe.

For evacuation up or down a precipice, in case of a fall over a cliff for instance, it was proposed to secure the patient in a Stokes litter and lower or raise it by rope, as in handling a patient up over the side of a ship.

The final decision was that a camp in the bottom of the canyon is practicable; that evacuation can be safely and comfortably effected by using pack litter or hand carriage to a trail and the mule-drawn, pneumatic-tired wheeled litter on the trails.

Photograph by Signal Corps, U. S. Army

Two Medical Department enlisted men, using their new individual equipment as harness, furnish the tractive power for a field litter carrier. The third man steadies the rear handles and guides the litter. Motorcycle wheels increase the patient's comfort.

Photograph by Signal Corps, U. S. Army

The field litter carrier being drawn by a mule. The men at the forward end of the litter serve as brakes, pick up the slack in the tow rope when negotiating corners, and can instantly release the mule in case of trouble. This is an easy, quick method of evacuation, but is considered unsafe on steep slopes off the trail.

Ranald Slidell Mackenzie

By Major Joseph Mills Hanson, F.A. Reserve

IT has been the fate of more than one talented soldier to live his life and pass from the stage without having evoked from any source an encomium of the terse and striking sort calculated to perpetuate his memory in the minds of his countrymen. But, sadly as a later generation has neglected the colorful career of that tireless frontier campaigner of a half century ago, General Ranald Mackenzie, it cannot be said that he lacked such a tribute. Whatever else his infrequent eulogists may have found to say of him, they have invariably featured the words written by General Grant in his "Personal Memoirs": "I regarded Mackenzie as the most promising young officer in the army. Graduating at West Point, as he did, during the second year of the war, he had won his way up to the command of a corps before its close. This he did upon his own merit and without influence."

Born in New York City, July 27, 1840, Ranald Slidell Mackenzie was the eldest son of Commander Alexander Slidell Mackenzie, United States Navy, and Catherine Alexander (Robinson) Mackenzie, daughter of Morris Robinson, of New York. Curiously enough, Commander Mackenzie's proper name was Slidell, but he changed it, at the request of a maternal uncle, a few years before the birth of Ranald, who was a nephew of John Slidell, the Louisiana statesman and diplomat.

Commander Mackenzie, in his day, was an author of some note, who published several books on travel in European countries, others on naval subjects, and a number of biographies, among them lives of John Paul Jones, Oliver Hazard Perry, and Stephen Decatur, as well as *A Library of American Biography*. Ranald inherited his father's tastes for the best in literature, but not his creative faculty. Paternal influence was, however, more clearly marked in his high sense of duty. The best remembered incident in Commander Mackenzie's professional career was his hanging of the son of John C. Spencer, Secretary of War, and two other young men, for mutiny on board the brig *Somers*. This action aroused widespread public discussion, and it is obvious that only a man of Spartan mould would have dared the dire consequences to himself from persons high in power, which might have followed such a drastic measure.

The son was early called upon to begin the exercise of a similar spirit of devotion to duty. His childhood was spent on a farm on the Hudson river, between Tarrytown and Sing Sing, to which his parents had removed a few weeks after his birth. To this home, in the spring of 1848, Commander Mackenzie returned from the Mexican War, with broken health, only to die suddenly a few months later. His widow was left with limited means for rearing her family of several children, and Ranald, the eldest, though only a child, immediately assumed toward his mother the attitude of affectionate care which he maintained ever after. Having suffered a slight sunstroke when three years of age, he was never again in perfect health, and any long confinement indoors brought on headaches and mental depression. But physical handicaps seemed only to render his spirit the stronger. It has been said of him that, thanks to his mother's teachings and the integrity of his own generous nature, he was from childhood absolutely truthful, absolutely brave—never covering an act of his own by a prevaricating excuse and never injuring anyone weaker than himself if it could possibly be avoided.

Young Mackenzie had entered Williams College, but during his junior year an unfavorable change in his mother's circumstances caused him to seek an appointment to the United States Military Academy.

He entered the Academy on July 1, 1858. According to Colonel Joseph H. Dorst, his biographer among the graduates of the Academy, he was a very diffident youth, reserved and awkward in company, with a slow and somewhat indistinct manner of speech and a decided inclination to hold himself in the background. With his fellow cadets, however, he manifested none of the embarrassment which afflicted him in general gatherings, and his sociability, loyalty to friends and keen love of

Signal Corps Photo

General Ranald Slidell Mackenzie

sport, coupled with the other virtues of a generous and thoroughly dependable disposition, soon made him popular in the corps.

Graduating at the head of his class in 1862, Mackenzie was commissioned a second lieutenant of engineers and immediately assigned to the staff of General Burnside and, soon afterwards, to that of General Jesse L. Reno, who for a short time commanded the 9th Corps in lieu of General Burnside. With Reno he took part in the second battle of Bull Run, where, while carrying a message during the second day's fight, he was painfully wounded by a musket ball which entered his right shoulder, passed under the skin of his back, and came out at the left shoulder. All night he lay on the field without aid, but next day was picked up and taken to Centerville and thence to Washington, where his younger brother found him in a hotel, suffering, but happy that he had gone through his first battle creditably. As he told his mother when she reached him, "I am wounded in the back but I was not running away." In fact, for his gallantry at second Bull Run he was given the brevet of first lieutenant.

His wound having healed, he reported for duty on October 9. General Reno had been killed at South Mountain, so Mackenzie was again placed on General Burnside's staff. But the Chief Engineer soon got him transferred to duty with the Battalion of Engineers serving directly under the army command of the Army of the Potomac. Until June, 1864, he continued with this organization, participating in all the great battles and many minor engagements, usually as engineer officer detailed to assist the commander of a subordinate organization. Thus he served with General E. V. Sumner as engineer of the Right Grand Division at Fredericksburg and as engineer of the 2nd Corps at Chancellorsville, where he received the brevet of captain for gallant services.

He was promoted first lieutenant, March 3, 1863, and during the Pennsylvania campaign commanded an engineer company, doing efficient work in building and laying bridges for the advance of the army. At Gettysburg he was temporarily attached to General Meade's staff, acting as assistant to General G. K. Warren, chief engineer of the army, performing his duties so well as to gain General Warren's enduring confidence and to earn his third brevet, that of major, for gallantry in action. Again wounded, though not so severely as to be incapacitated, he continued in the field during the pursuit of Lee to the Rapidan.

Engineering work kept him busily occupied through the winter of 1863-4 and the early stages of the Wilderness campaign. By this time, thanks to his energy and intelligence, he had risen to the rank of captain, November 6, 1863, and had attracted the favorable attention of all his immediate superiors. To their good opinion he owed the opportunity for still more rapid advancement which now came to him.

Among the many units which suffered staggering losses in the bloody assault at Cold Harbor, June 1, 1864, was the 2nd Connecticut Artillery, a new regiment, 1,800 strong, which had joined the army but a few days before. It was artillery in name only, being armed and trained as infantry, and it belonged to the 2nd Brigade, First Division, 6th Army Corps, which under General H. G. Wright was the center corps in that attack. An eyewitness, General M. T. McMahon, describing the scene of its assault, said that since the uniforms of the men were bright and new, its dead were easily distinguished where they lay. "They marked in a dotted line an obtuse angle, covering a wide front, with its apex toward the enemy, and there upon his face, still in death, with his head to the works, lay the colonel, the brave and genial Elisha S. Kellogg."

In seeking a successor to Colonel Kellogg, the surviving officers of the regiment decided to ask for the appointment of a regular army officer. There is, in the Official Records of the War, a letter from General Warren to General Meade, recommending Captain Mackenzie for the command in terms of warm praise for his qualities as an officer and a man. Whether or not this letter first drew the attention of the Connecticut officers to him, they made an application for his appointment, and going up through channels it was favorably endorsed by all their immediate superiors: General Upton, commander of the brigade, Russell, of the division, Wright, of the corps, Meade, of the Army, and, finally, by General Grant.

Slight attention has ever been bestowed upon Mackenzie's handling of troops during the Civil War, after he became a field officer. But, as General Grant inferred, it was masterly and worthy of attention, wherever detailed evidence exists regarding it, as foreshadowing his methods on the frontier. The 2nd Connecticut Artillery was the first organization with which he demonstrated his abilities. Not yet twenty-four years of age, he took command of it on June 6th, though his commission as colonel of volunteers was not dated until July 10th. Coming to the regiment while it lay behind the breastworks at Cold Harbor from which it had attacked, he found its officers and men still benumbed by the fearful ordeal through which they had passed. Under these conditions it was easy for him to at once become master of the situation, and though for a few days he contented himself with observing and gauging the quality of his new command, soon his thorough knowledge and high standards of military efficiency impelled him to begin the enforcement of a rigid discipline very galling to these volunteer soldiers.

They became speedily convinced that in inviting the administration of this "commanding scourge," they had caught a Tartar, who, according to the regimental historian, Lieutenant T. F. Vaill, by the time they had reached the Shenandoah Valley, "had become a greater terror to officers and men than Early's grape and canis-

ter." A well-defined purpose is said to have existed among the men to dispose of him in battle at the first opportunity. But, continues the regimental chronicler, "if he had known it, it would only have excited his contempt, for he cared not a copper for the good will of any except his military superiors, and certainly feared no man. . . ."

He had been with his command only twelve days when the brevet of lieutenant-colonel, regular Army, was conferred on him for gallant and meritorious services in the fighting before Petersburg on June 18th. Four days afterward, in the same operations, he was giving an order, with arm extended, when two of his fingers were shot off, producing the mutilation which in later years caused the Indians to dub him "Bad Hand." The wound compelled him, reluctantly, to take a short leave at home, but within three weeks he returned, in time to lead his regiment, with the rest of the 6th Corps, to the defense of Washington when General Early threatened the city.

Soon after, General Sheridan assembled his army for the conquest of the Shenandoah Valley, and the 6th Corps became a part of his force. In the first great battle of the campaign, at Winchester on September 19th, Colonel Mackenzie, by sheer reckless valor, finally won not only the tolerance but the complete devotion of his regiment. "He seemed to court destruction all day long," wrote Lieutenant Vaill. "With his hat aloft on the point of his saber, he galloped over forty-acre fields, through perfect hailstorms of rebel lead and iron, with as much impunity as though he had been a ghost. . . . His leg was skinned by a shell that cut his horse asunder, but tying a handkerchief around it, and remarking with grim jocoseness that this was 'dismounting without numbers,' he went on with the regiment."

Seeming, indeed, immune to fatal injury, he certainly was not so to wounds, for he was continually getting hurt more or less severely. At Middletown and Fisher's Hill he escaped, though his regiment lost more heavily in the three fights, including Winchester, than any other in the 6th Corps. But at Cedar Creek, on October 19th, where he succeeded to command of his brigade, he was wounded in the foot during Early's attack in the morning and in the leg during the Union advance of the afternoon. Another horse was killed under him, and finally a projectile struck him in the chest and knocked him from his second horse, stunning him. For a short time his arms were paralyzed, but even in this condition he ordered his men to replace him in the saddle, where he remained until the victory was secured. In a short dispatch to General Grant from the field, Sheridan mentioned him by name, stating that "Col. R. S. Mackenzie, commanding brigade, wounded severely, would not leave the field," and he received the brevet of colonel, regular Army, for his heroism. This time his injuries obliged him to take a longer leave, and though appointed a brigadier general of volunteers to date from October 19th, he did not rejoin his brigade until November, before Petersburg.

After establishing such a record in the Valley, it was not surprising that the young brigadier, after his return to the Army of the Potomac, found himself in the favor of General Grant. It has been well said of him that "he had chosen the trade of war, and it soon became evident that he had a remarkable taste and aptitude for the business." The supple mobility with which he maneuvered his infantry must have impressed others than Upton, Sheridan and Grant, for as early as the end of October, 1864, General James H. Wilson, who had just left the Valley to take command of General Thomas's cavalry in Tennessee, applied, though unsuccessfully, to have Mackenzie, together with some other officers, assigned to him for service in the cavalry expedition which he was even then planning to lead on a great raid through the Gulf states.

But it was Grant himself who gave effect to the idea that his greatest aptitude might lie in the management of cavalry. On March 13, 1865, with spring and the resumption of active operations in immediate prospect, the commanding general sent a note to General Meade, requesting that General Mackenzie might be relieved from duty in the 6th Corps in order to take command of the cavalry of the Army of the James. General Wright expressed himself as loath to part with "so good a soldier," but naturally the wishes of the lieutenant general prevailed, and next day Mackenzie took command of the cavalry mentioned.

Though designated a division, with two brigades containing four regiments and one battalion, its organizations were so depleted as to be little more than skeletons, and when the command started toward the left of the Union Army on March 28th, it counted less than 1,700 officers and men. The division marched to Reams Station, on the Weldon railroad, where it guarded certain army trains until early on the morning of April 1st, when Mackenzie received an order, direct from Grant, to move at once to Dinwiddie Courthouse and report to General Sheridan.

He marched immediately, and reaching the courthouse soon after daylight, was ordered by Sheridan to rest in the fields north of it until needed. Meantime the three cavalry divisions of Sheridan's own command, amounting to 9,000 effectives, drove the Confederate infantry division of General Pickett and the cavalry of General Fitzhugh Lee northwest into their entrenchments along the White Oak road at Five Forks. The 5th Corps, under General Warren, moved at the right of the Union cavalry for the purpose of making an overwhelming attack on the open left flank of the Confederate position. This position was separated by an unfortified space of more than three miles from the right of their main Petersburg line, established along the White Oak road at its junction with the Claiborne road.

Early in the afternoon, while the 5th Corps was

getting into position and Sheridan's three cavalry divisions lay in front of Five Forks ready to make a simultaneous frontal attack, General Sheridan learned that the 2nd Corps, on his right, which in consequence of his movements was now become his right rear, had drawn back its left flank, leaving the White Oak road open from the Claiborne road to Five Forks. Hence it had become possible for a Confederate force to move west from the Claiborne road and fall upon the rear of Warren's corps while it was assaulting Pickett at Five Forks.

Now it was that Sheridan found Mackenzie's small division, still held in reserve, of supreme value, while Mackenzie himself encountered one of the brilliant opportunities of his career. Sheridan ordered him north on the Crump road to its intersection with the White Oak road midway between Five Forks and the Claiborne road, "with directions," to use Sheridan's words, "to gain the White Oak road if possible, but to attack at all hazards any enemy found, and if successful then march down that road and join me."

It would have been easy for Mackenzie to have found reasons for executing his orders so deliberately as to have rendered his movement entirely abortive. By details and other losses his command had become reduced to about 1,000 men. With these he was required to advance four miles over an exposed road, mostly through heavy woods, straight upon a point of such vital importance to the enemy that a force large enough to annihilate his own was more than likely to be encountered there. He could hardly have been blamed if he had moved with caution.

But he did not. He led his column up the Crump road at the greatest practicable speed and on reaching the White Oak road at about 2:00 o'clock in the afternoon, hurled his troops like a tornado on the enemy whom he found holding the forks. It might have been Anderson's Infantry, marching to the support of Pickett. But it proved to be only Rober[illegible] small brigade of cavalry, of W. H. F. Lee's division. Mackenzie drove the North Carolina horsemen off toward Petersburg and leaving a battalion to guard the forks, instantly swung the rest of his command into the White Oak [illegible]oad and marched west to carry out the latter part of his orders.

Rapidly approaching the flank of Pickett's position, he was about to charge down the road into it when the infantry of the 5th Corps, with the same purpose in view, appeared on his flank. Thus at 4:00 o'clock, when Sheridan, accompanying Warren, reached that part of the field, fuming with impatience and anxiety as his black "Rienzi" fumed at the bit, it was to find that Mackenzie had not only cleared and secured the rear of the corps which was to make the decisive attack but had come clear through, and with his packet of troopers was right at hand, ready and eager for the next task. It is easy to imagine the delight of a commander of Sheridan's temperament in such a superb demonstration of obedience to the letter and spirit of orders.

Thanks to Mackenzie's timely arrival, the commander on the field now had cavalry to cover and prolong the right of his main attack. He instructed Mackenzie to place his squadrons on the marching flank of the infantry, and when the latter made its left wheel and attacked, to swing round with it and get possession of the Ford road at the crossing of Hatcher's Run, in Pickett's rear. Within a few moments the general assault was launched and smashed through with brilliant success, sweeping the enemy from the field. Mackenzie's men, "charging handsomely," as he reported, "through thick woods, mounted," soon reached the right and rear of the enemy's line, capturing a large number of prisoners. They were prevented from taking the Hatcher's Run crossing by Rosser's cavalry division, standing north of the stream, but Sheridan credited them and Merritt's troopers with pursuing the enemy for six miles that night.

During the ensuing pursuit of the Army of Northern Virginia to Appomattox Court House, General Mackenzie's small force was constantly on the move, and frequently engaged.

In spite of long and exhausting marches and frequent engagements, Mackenzie, with all the bulldog tenacity which later characterized his Indian campaigns, hung on the enemy's flank, and during the night of April 8-9 his was one of the first bodies of cavalry to get across the road from Appomattox Courthouse to Lynchburg, squarely on Lee's line of retreat. Standing in an isolated position on the morning of the 9th, his men fought valiantly against the furious attack of Rosser's and Munford's cavalry divisions but were finally driven back by superior numbers, with the loss of one field piece, enabling Rosser and Munford to effect their escape to Lynchburg. Early that afternoon General Lee surrendered the Army of Northern Virginia.

In the distribution of final honors, Mackenzie received the brevets of brigadier general, regular Army, and major general of volunteers for gallant and meritorious services during the war. But, owing largely to his work during the last ten days of fighting, he had won something of greater practical value than these; the confidence and goodwill of a number of men who were, and were long to remain, high in the councils of the nation. This was of more importance, in the case of one so modest as he, than it might have been in that of a more self-seeking person. Thanks to it, the obscurity into which he stepped at the close of the war was not long continued.

Mustered out of the volunteer service, January 15, 1866, he reverted to his permanent rank as captain of engineers and was stationed until May, 1867, at Portsmouth, New Hampshire. In the reorganization of the army he would hardly have received a higher rank than that of major but for the fact that it proved difficult to find officers for certain newly formed regiments of colored troops. One of these was the 41st Infantry, the colonelcy of which was declined by several officers. It was finally offered to Mackenzie, who, on the advice of friends, ac-

cepted it, and in June, 1867, took command at Baton Rouge, Louisiana. In July he was ordered with his regiment to Texas, where he did duty along the Rio Grande and at Forts Clark and McKavett. These posts were well out on the frontier, where scouting and hunting relieved the monotony of garrison life.

Ambitious, as always, for his organization, if not for himself, no sooner had he taken command than General Mackenzie began trying to make the 41st Infantry the best colored regiment in the service. His most important measures to this end were to have the recruiting stations changed from the Southern to the Northern states and to instruct his recruiting parties to enlist only intelligent men. The regiment was consolidated in November, 1868, with the 38th Infantry to form the 24th Infantry, of which Mackenzie then became colonel. The next year President Grant, of his own volition, made it possible for him to be transferred to the 4th Cavalry, of which he took command on December 15th.

Without solicitation on his part, Mackenzie now found himself, at the early age of thirty, in the position he had most earnestly desired; that of commander of a regular cavalry regiment. It was, moreover, a regiment whose officers, before the war, had included Joseph E. Johnston, George B. McClellan, J. E. B. Stuart, John Sedgwick, and many other soldiers who later distinguished themselves, even including, for a short time, Robert E. Lee. With it, during the next twelve years, General Mackenzie was to serve with undeviating success and to achieve many results not merely dazzling but of enduring value to his country. Space forbids more than an outline of his innumerable activities during these crowded years, with a little more attention given to a few of its most notable episodes.

The new colonel found his regiment at scattered posts in western Texas, where it had been active against the Comanche, Kiowa, Apache, Kickapoo, and other Indians who were occupying all of Texas west of the one hundredth meridian and the adjacent parts of New and Old Mexico; a vast region whose virtual center was the Llano Estacado, or Staked Plains. These plains comprise a slightly undulating plateau, most of it in northwestern Texas, extending 350 miles from north to south and about 250 miles from east to west, and was a paradise for the nomadic Indians who for many years had occupied it, dashing out at will to steal cattle and horses and to attack the scattered settlers on both sides of the Rio Grande. At one time partially subdued, they had made treaties whereby they had agreed to settle on reservations but later had defied the government to keep them there. Troops and Texas Rangers, operating against them, had accomplished nothing decisive, being too few and scattered either to protect the settlements or to follow the savages into the unexplored wilds of the Llano Estacado.

General Mackenzie decided at once that the only way to bring the hostiles into subjection was first, to learn something of the topography of the Llano Estacado and then to lead into it columns of troops properly equipped to follow the Indians to their hiding places and strong enough to attack and defeat them there. During the summer and fall of 1871 he conducted an exploring expedition into the region and acquired knowledge regarding it which later proved very useful. But the savages had rather the best of their few encounters with him; he lost, at different times, more than eighty of his horses and mules and on one occasion was himself shot in the leg by an arrow. His men, however, found out what he had meant when he had written home, on taking command of the regiment: "I intend that it shall not be on account of any laziness of mine if it falls below any other," and they were keyed up for stern work when he again led them forth the following summer.

This time he struck out with six troops into the northern part of the Staked Plains and making a night march, on September 29th discovered a large Indian village on McClellan's Creek, near its junction with the North Fork of the Red River. Between 3:00 and 4:00 o'clock in the afternoon he advanced in column against it. Strangely enough, according to Major W. A. Thompson, one of his officers, though the Indians saw the column while it was crossing a ridge several miles off, it was so enveloped in dust that they mistook it for a herd of buffalo being driven toward the camp for slaughter by some of their own hunters, for they were drying meat and making pemmican for the winter supplies. So little did they anticipate an attack in that remote place that the soldiers were within half a mile before their true character was discovered by the red men.

The latter had little time for preparation, for Mackenzie, riding beside the commander of the base troop, drove home the charge in echelon, with troops in columns of fours. When near the center of the camp, the soldiers received a volley from about seventy-five warriors who rose up behind a grassy ridge and fired, but the volley was so high that it inflicted few casualties. A hot fight developed at a crescent-shaped ravine in which about eighty warriors were trapped by "A" Troop, the Indians charging the line twice and being repulsed with heavy loss. Within an hour the battle was over and the camp in possession of the assailants, who captured about 200 squaws and children and 3,000 head of horses and burned a hundred lodges and all the winter supplies of the Indians. In after years the latter admitted a loss of fifty-two warriors killed, while Mackenzie had only four or five men slightly wounded. It was his first important Indian battle and one of the most complete victories of his career, for which he and his command were congratulated in a general order of the War Department.

Having advanced his headquarters to Fort Clark, near the Rio Grande, in the spring of 1873 he made a business of learning the location of the principal Indian camps in Mexico, whence marauders were in the habit of crossing the river to attack American ranches. Having acquired enough information for his purpose, he concentrated six

troops and, crossing the river one evening in May, marched forty miles into the interior and shortly after daybreak surprised a Kickapoo camp located within a few miles of the Mexican town of Rey Molino. Most of the warriors were absent on a raid, but forty squaws and children and two hundred horses were captured, and the camp burned. Carrying his wounded and prisoners with him, he regained the north bank of the Rio Grande before sunrise next day, he and his troops having had no rest for fifty hours.

Although a tacit understanding had existed between Mexico and the United States as to the troops of either country crossing the international boundary when in close pursuit of hostile Indians, Mexico protested to Washington regarding this expedition. But Mackenzie's action had the approval of General Sheridan, as well as that of the Secretary of War, and the matter was satisfactorily adjusted. In consequence, however, of long and exhausting field service during this season, General Mackenzie, never strong, suffered an attack of inflammatory rheumatism which obliged him to take a long sick leave and impaired his health ever afterward.

Nevertheless, physical sufferings could not quell his indomitable spirit. When the autumn of 1874 rolled around, he was in the field again, operating against the hostile Comanches, Kiowas, and Cheyennes who, joined by many discontented Indians from the reservations in the Indian Territory, were gathered in the Staked Plains about the headwaters of the Brazos and Red rivers. On the night of September 26th his supply camp was attacked by Indians, who were repulsed, and the next day he followed them forty miles to some of their minor villages in the Paladuro canyon of the Red river. These were burned and their occupants scattered.

The average leader might have been satisfied with such results, considering the exertions already put forth. Not so Mackenzie. He pushed doggedly ahead and about midnight, September 27-28, struck a broad trail which led into a narrow canyon some 700 feet deep. The track was so steep that the men had to dismount and lead their horses. About half-way down an Indian gave the alarm, rousing the main village, which was just ahead. Nothing more was possible on the part of the troops than a slow dismounted advance. While the warriors fought them from the rock walls and side ravines, and the Indian women and children fled to shelter in the gullies, the advance elements worked their way ahead of the huge herd of horses choking the main canyon and turned them back to the supporting troops. The camp, with a great quantity of supplies, was burned, and next day, after selecting the best horses for the command from the 2,000 captured, 1,040 remaining, which could not be driven back to the nearest post, 200 miles away, were shot to keep them from falling again into the hands of the Indians. This band, dismounted and destitute, made its way as quickly as possible to Fort Sill and surrendered.

Still keeping the field as winter closed down, Mackenzie, following the small, scattered bands, penetrated parts of the Llano Estacado which had theretofore remained inaccessible to troops. Traveling in the lightest possible order, living on the simplest fare, his force moved from water hole to water hole, always rapidly, often by night marches, every now and then finding a small hostile camp, destroying it, taking its horses, and driving its inhabitants out into the bleak weather.

Never before had these Indians been trailed to their utmost retreats, and this relentless pursuit was more than they could endure. Mackenzie, his horses worn to the bone, his men out of food and nearly in rags, returned at the end of February, 1875, to his base at Fort Griffin, Texas. But before the end of March, all of the 1,500 hostiles whom he had been harrassing had straggled into Fort Sill and given themselves up, and from that day to the present the people of Texas have been free from Indian hostilities.

General Mackenzie's headquarters were now established at Fort Sill, where, in the Indian Territory, he found a situation exactly the reverse of the one with which he had just been dealing. The Indians, having returned to their reservations, were being preyed upon by white renegades who would sometimes run off a hundred horses from one camp in a single night. As zealous to protect the peaceable red men as he was to punish the unruly ones, he took such vigorous measures against the white marauders that "in six months," it has been said, "a horse could be tied and left within a day's march of the post, and there it would remain until the wind blew its dust away." But though he could safeguard others, the gallant commander could not save himself from the physical misfortunes which were ever befalling him. During this summer, while in a wagon at Fort Sill, one of the horses started suddenly, throwing him out on his head on the ground. He was in a semi-stupor for several days, and for months his mind did not again become entirely clear.

Nevertheless, he stuck to his duties. Immediately after the destruction of General Custer and his command in June, 1876, Mackenzie with six troops of his regiment was ordered to Dakota, with the Red Cloud and Spotted Tail agencies under his control. In a troubled time he kept these reservation Indians in order while waiting to take the field with the cavalry of General Crook's Powder River Expedition for a winter campaign against the Sioux and Cheyennes who still remained off their reservations in the region of the Big Horn Mountains.

That expedition was perhaps better equipped for a winter campaign in the sub-arctic climate of the high plateaus than any other ever employed there. General Mackenzie had 750 cavalry from his own and the 2nd and 5th regiments and 350 Pawnee, Crow, and Shoshone Indian scouts. The main camp was established near the base of the Big Horns, and from it the cavalry set out into the mountains on November 23d, when the ground was covered with snow and the temperature many de-

grees below zero. The scouts having discovered a large village of Cheyennes in Willow Creek canyon, the column pressed on to the mouth of the latter, reaching it on the night of the 24th. Mackenzie decided to await the still hours before daybreak for the delivery of his attack.

These Cheyennes were perhaps the most magnificent fighters of all the Plains Indians, and the battle which ensued was one of the most spectacular and ferocious in the history of the Northwest, emphasizing the horrible character of Indian warfare there. It was fought in a gloomy gorge of the Big Horn Mountains, wherein, wrote Dr. C. T. Brady, in his *Indian Fights and Fighters*, "a swift, ice-bound river rushed over the rocks between precipitous walls, which soared into the sky for perhaps a thousand feet on either side. . . . Here and there the canyon widened, and in one of these open places the Cheyennes, under the leadership of Dull Knife, had pitched their camp. They fondly believed the place impregnable." A few miles off, Mackenzie's men "stood in ranks by their horses in the snow in that polar cold, waiting for the order to advance."

At moonrise the order was given, and just at daybreak the troops, cheering and shouting, burst upon the village. With no time to clothe themselves, the warriors seized rifles and cartridge belts and, many of them naked, dashed from their lodges and began fighting. The village was soon captured, but they swarmed up the sides of the canyon and fired down on the troops. Unless they could be dislodged, Mackenzie's position would become untenable. He ordered a charge of dismounted skirmishers against the canyon walls. "General Mackenzie and his orderly were the only mounted men in the movement," wrote Lieutenant Charles L. Hamilton afterward. "He was, of course, the target for every Indian rifle, but to see him one would have supposed a hostile within a day's march. When we were close up to them he commanded: 'Commence firing!' and rode away. I thought then that General Mackenzie was the coolest, bravest man I had ever seen."

Despite their sufferings, the Cheyennes fought doggedly all day, sometimes coming hand to hand with the troops, whose casualties were much heavier than those usually suffered under Mackenzie's command. Dull Knife was dead in the village with six bullets in his body. A dozen Indian babies, and probably many men and women, froze to death in the awful weather, while the battle losses of the defenders were probably more nearly a hundred warriors than the twenty-five whose bodies, according to Mackenzie's report, fell into the hands of his troops. The Cheyennes retired several miles up the canyon, where they could not be dislodged, and the soldiers were finally obliged to retire toward their own camp. But their purpose had been fully accomplished, for Dull Knife's village of 173 lodges, with all the winter supplies for a thousand people, was utterly destroyed,

RANALD SLIDELL MACKENZIE

(From biographical article by Captain Joseph H. Dorst, 4th Cavalry, in the Journal of the United States Cavalry Association for December, 1897.)

500 horses were captured, and the survivors of the band, starving and freezing, struggled as quickly as they could to the nearest agency and gave themselves up.

Returning to Fort Sill in 1877 and taking command of the District of the Nueces in 1878, the tireless guardian of the frontier in June crossed the Rio Grande with a large force to pursue Indian raiders and cattle thieves. While returning to Texas by another route, Mexican troops confronted him, demanding that he go back over the road by which he had come. As this would have been far out of the way, he informed the Mexicans that he intended to return by the nearest ford, and if they attempted to interfere, he would fight. He then advanced and they retired, leaving him to re-cross the river at his discretion.

After being in command in 1880 of the short-lived Department of Arkansas, 1881 found him in Colorado, where a crisis was developing with the Uncompahgre Utes at the Los Penos agency over their removal, under a treaty already made, to a new reservation in Utah. General Mackenzie acquainted himself with their views and became convinced that they did not intend to move on the stipulated date. If they refused, nothing further could be done until the Interior Department at Washington had been notified and had in turn notified the War Department to place the Indians under the orders of the military commander on the spot, with authority to remove them forcibly. Ordinarily this would involve a

delay of a number of days, during which the hot-tempered Indians, having issued their defiance, were almost certain to begin hostilities.

In order to insure prompt action and minimize the dangers, Mackenzie, while waiting, caused eighty miles of telegraph line to be built, placing him in direct communication with Washington. On the appointed day the Ute chiefs informed their agent that they refused to move, and he asked them to wait until he could learn what the Secretary of the Interior had to say. Supposing that this would involve a lapse of time during which they could foment trouble, they consented. Over the new wire the agent at once telegraphed Washington, where the Secretary of the Interior promptly turned the Utes over to the War Department. Next day, when the chiefs came to the agency, they were told that General Mackenzie would give them their answer at the cantonment, four miles away.

Fully armed and in ugly humor they went there, about twenty in number. Mackenzie and a few of his officers, all unarmed, calmly met them in his office, where the Indians began making insolent speeches and quibbling excuses. The general cut them short. Deliberately and earnestly he told them that he had no time to waste words; that his orders were to see that they moved at once, and he wished them to tell him distinctly whether they would go peaceably, or whether he would have to use force. Adding that he would leave them alone in his office and that when they had reached a decision they could send for him to come and hear it, he put on his hat and went to his quarters.

Amazed by such brusque treatment and awed by his decision and dauntless personality, the chiefs, in less than ten minutes, sent for "Bad Hand" and humbly told him that they would go. Thus summarily did he effect a permanent settlement of the Ute question in Colorado and avert an Indian uprising, with its possible loss of hundreds of lives and millions of dollars' worth of property. The general himself considered this the most important deed of his life, and it is not hard to concur in the opinion.

Certainly it was, in a sense, the zenith of his career; a final benefit conferred upon his countrymen. The year after its occurrence, an Apache uprising threatening in Arizona, he was sent there by General Sherman to command all the forces in the field, but he found nothing of importance to do and was soon recalled at his own request. October 26, 1882, he became a brigadier general and was given first the District of New Mexico, and then in November, 1883, the Department of Texas. It was his last duty. A few weeks later his health, long in precarious condition, gave way permanently, and in March, 1884, he was retired for disability incurred in the line of duty. He had become a victim of insanity, occasioned partly by the sunstroke suffered in childhood and the injury to his head sustained at Fort Sill, but probably in equal measure by the physical and mental labors and the extreme hardships of field service to which he had unsparingly subjected his frail body, highly nervous temperament, and conscientious mind.

For nearly five years longer he lingered, tenderly cared for by his sister at her home in New Brighton, Staten Island, where he died on January 19, 1889, at the age of forty-eight. His remains lie buried in the cemetery at West Point, close to those of Buford, Sykes, Kilpatrick, and many other old friends and comrades who, like him, distinguished themselves in the service of their country.

It is doubtful if any soldier of his grade and opportunities ever accomplished more in Indian warfare than General Mackenzie. He never suffered a serious disaster nor committed a glaring error of judgment. Yet, though so successful as a fighter, he always declined to resort to arms if the spirit of his orders could possibly be carried out by peaceful means. Time after time he brought recalcitrant tribesmen to terms by firmness, persuasion, or a mere show of force under circumstances in which a leader of less humanity and moral stamina might have found it expedient to fight first and talk afterward.

But when it became necessary to use force, he threw all his power and genius into the blow and drove it through to complete victory. This once assured, he stopped, that both his own men and the enemy might be spared unnecessary suffering and loss of life. Added laurels for himself never tempted him to cruelty. His casualties were habitually small as compared with those of other troops in engagements of equal magnitude, but his results often stood out as singularly decisive and far-reaching.

His aversion to seeking applause or preferment for himself has tended to confine General Mackenzie's fame to a narrow circle of admirers who from knowledge of his career have learned appreciation for his qualities. His exalted standards of duty, discipline, and efficiency often led subordinates and associates to regard him, on first acquaintance, as a harsh and unreasonable martinet. But those who remained long under his influence, such as the members of his Civil War regiment of volunteers, have been the most eager to testify that prolonged association led to increasing respect, even love, for him, inspired by his courage, loyalty, and simplicity, his nobility of heart and purity of character, and the unselfish devotion which forbade him to subject any man to dangers or hardships which he himself would not endure. The life of Ranald Mackenzie is a golden thread in the rich tapestry of the American military tradition.

Pushing Age Back

By Colonel George A. Skinner, Medical Corps, U. S. Army

PROBABLY it is quite unusual for young men in civil life to plan definitely for retirement, but in the Army the subject of retirement is constantly kept before us from the time of our first contact with the service until it becomes an accomplished fact. We see the older officers moving toward the retirement age and passing out of the active life of the service. We hear of the advantages of retirement from the Army, and it is urged as one of the reasons for accepting military life as a career. Usually, however, it seems to be something in the far distant future and while it may affect others it never seems to have a personal touch until it is approaching or arrives.

The law that fixes the age for retirement at sixty-four is based on many years of observation and experience. It does not necessarily mean that a man is worn out at that age but it indicates that the great majority have passed their prime and are not expected to keep up with the rigors of active military service. The Army retires its officers at an earlier age than most civil institutions do that have a retirement privilege at all. Apparently it was contemplated that there should be a number of years of enjoyment of the freedom that comes with the retirement. It is a sad commentary, however, upon our ability to take advantage of this privilege that not over ten per cent of the officers reach retiring age in anything like good physical condition. This is further emphasized by the fact that the average life on the retired list is not over five years. Since the men who enter the service are presumably considerably above the average physically, it seems worth while to consider why the wastage is so great in a life that except in war times ranks well in safety with most civil pursuits. This question has been one that has interested the writer throughout his entire career in the Medical Corps of the Army, and the following data are submitted as a summary of many years of observation in the service.

Naturally in every occupation of life there is a certain amount of wear and tear. Given a group of men, say of one thousand, we can very accurately predict the number that will constantly be sick, the number that will be injured and the number that will die from disease or injury. These figures have been worked out through many years of observation, both in and out of the service, and are almost mathematical in their exactness. In times of war this inevitable loss is much increased, but here again we have figures that are fairly accurate. Such losses as these may be termed "nonpreventable," as no method has been found in our present stage of knowledge that causes much change in them. Many other losses occur which are more or less preventable, and it is to these that I wish particularly to direct attention.

The possible limits of commissioned service at present are forty-three years. To this may be added four years that was formerly possible when cadet service at the Military Academy was counted. The average man, however, is not commissioned until he is nearer twenty-five than twenty-one, so that the possible service of the great average is under forty years.

As a member of retiring boards through many years, it has been my observation that by far the greater percentage of retirements results from breakdown of one particular part of the body—that is, the circulatory system, which is made up of the heart and the blood vessels. If we could eliminate this from our causes of retirement we would probably eliminate more than seventy-five per cent of the disabilities in the service. Of course, we occasionally have a man break down from disease, such as rheumatism, from kidney trouble, from injuries, or from mental causes, but these are rare in proportion to those coming from the circulation.

In order to reduce as much as possible the very expensive and oftentimes disastrous losses of the service on account of physical disabilities developing, sometimes with apparent sudden unexpectedness, the annual physical examinations were instituted and have proved very valuable though it is a well-known fact that a large percentage of officers look forward to the annual physical examination with more or less dread. This should not be the case. The proper attitude toward the annual physical may make it one of the most valuable contributions to the preservation of health that we have available.

By common consent, we say that maturity starts at about twenty-five years and continues at about the same until approximately forty-five years. From forty-five years to sixty is considered generally as mid-life. Usually after sixty, people are spoken of as old. These age figures are relative only, because it is well known that some people are old at an early age, while others are young physically into the old age period. If we could find out just what constituted this difference, many of our physical problems would be solved.

In babyhood and childhood we note that the little body has all sorts of tumbles and bumps that in older life might be disastrous, and we say that the child is "elastic." This is literally true. Bones at this period are very much like rubber in their ability to bend without breaking. This is due to the fact that the very important stiffening material has not yet been deposited to any great amount; that is, the lime salts, which make the bones strong and rigid, are not fully deposited in the growing parts of the bones until the period of growth stops, which as mentioned is at about twenty-five years. For another twenty years this elasticity remains relatively high though con-

stantly diminishing in the average individual. From forty-five on, this lime deposit usually goes on more or less continuously, and as age comes on the non-elastic material is greatly in excess of the elastic. Hence we do not expect the old man to be able to fall around with the impunity of the child, and this tallies exactly with the fact. Unfortunately this lime deposit does not stop with the bones. It may go on more or less in many tissues of the body, but what particularly concerns us is that it affects the circulatory system.

The heart is a powerful double force pump of marvelous construction and of the efficiency that is the dream of every mechanical engineer. It forces the blood into a system of elastic tubes, known as arteries, starting at a very large one at the heart and rapidly dividing and subdividing until they become so fine that they were likened to hairs by the early anatomists, and hence called capillaries, and invisible to the naked eye. From these it gradually builds up again into larger and larger vessels, known as veins, and so the system is completed. The arteries are very highly elastic, the capillaries somewhat so and the veins much less so than either of the other two parts of the circulation. In all systems of hydraulics it is necessary to have something to act as a buffer since the liquids are practically incompressible, and in a system of rigid tubes, such as a water system, rupture of the tubes would take place on any sudden increase of pressure, so that an air chamber is provided to prevent such a disaster. In the circulatory system of the human body this factor of safety is provided by the high elasticity of the arteries themselves. When the heart forces the blood into the great vessel, the aorta, it immediately expands and then, as it contracts, the blood is forced on much more smoothly than it would be if this elasticity were absent. But sometimes deposits of lime decrease the elasticity of the arteries and make the vessels, particularly the little ones, tortuous. It not only increases their length but decreases their caliber. This in turn increases the work on the heart and causes an increased pressure in the circulation, and we have what is commonly known as "blood pressure." The ordinary conception of blood pressure is something that is abnormal. Naturally it requires a certain amount of pressure to maintain the circulation, but so long as this is within normal limits it is rarely mentioned. When we talk about blood pressure therefore, it means in common language an increased amount of resistance in the circulation with a proportionate amount of increased labor on the part of the heart.

Elasticity then is the priceless possession that determines the difference between age and youth. Anything that will preserve this elasticity tends to postpone the physical manifestations of age. Hence if we can determine what causes the deposit of lime in the various parts of the body and can find some way to prevent this, much damage to the circulation will be prevented. It is the circulation in which the danger is most apparent and hence the most vital to be considered. The chemistry of the body is so exceedingly complicated that it is always difficult to state absolutely that one thing and one thing only is the cause for any change of function in the body. Long observation and experience have pointed to certain factors that influence these changes, and a proper consideration of these facts will often prolong physical efficiency into much later life than would otherwise be the case.

One of the great causes of heart disability in mid-life is found in a common infection of youth, i. e., acute articular rheumatism. This disease is essentially a disease of youth and often of childhood. Sometimes the recovery is complete with no trace of damage left, but this is the exception, as by far the greater percentage of rheumatic cases are left with more or less damage to the heart. With the marvelous elasticity of youth and the reparative power of this mighty organ, the repair may be complete enough so that there are no symptoms left over, and sometimes the patient is unaware that the heart has been damaged. With the approach of mid-life and the gradual loss of elasticity, however, the heart is no longer able to stand the more severe strains, and the possessor of the damaged heart commences to show symptoms after hard physical exertion, especially if it be prolonged. This type of trouble we see much less frequently in the service than civil life, as nearly always such cases are eliminated at the entrance examination, but occasionally one is found in the service whose damage was developed after his entrance therein, as this disease, while most frequent in youth, is not confined to that period by any means. The only way to prevent the serious damage to the heart from these rheumatic attacks is by prolonged rest after the patient is apparently well. It is readily seen that this is difficult to carry out, as the youth resents interference with his activities and is anxious to be about. If, however, he can be properly controlled and kept at rest until the heart has made all the repairs possible, his chance for survival in mid-life is very much better than it otherwise could be.

With chemical processes in the body so complicated it is not surprising that occasionally there are disturbances. We are not always conscious of these disturbances, and sometimes they go on for years without causing any particular symptoms to call attention to themselves. Thus, chronic constipation may induce a series of faulty chemical processes in the body that reflect on the whole system. Too much or too little lime may disturb the balance of the body. Over or under function of the glands sometimes produces violent symptoms, but more often result in a chronic disturbance that is not noted for a long time. These things may all be causes for the unbalanced condition of body chemistry that results in the abnormal deposit of lime and the consequent loss of elasticity of the various parts of the body.

More often, however, there are causes which are much

in our control but which we are unwilling to admit. Of these, two are outstanding. The first one is overeating. The continued overnutrition results in deposits of fat and thereby increases the load on the circulation to a greater or less extent. The body is like any other machine and is designed for a certain maximum efficiency at a given load. All machines are designed to carry a certain overload safely, but in machine designing it is not figured that the overload will be constant, and nothing is so damaging to a machine as a constant overload, though that is precisely what happens when a person who is normally designed to weigh about 180 pounds is carrying 225 to 240 pounds constantly. Overweight is responsible for several of the major ills of the body. In these may be mentioned the wear on the circulation with the frequent accompaniment of an abnormally high blood pressure: and diabetes, as diabetes is almost always associated with overfeeding. The subject of overweight has been very seriously considered in the service of late years, and much has been done to correct this condition; but the opinion is still much too common that overweight is due to some mysterious process of heredity, or glands, or occult influence rather than the continued taking on of too much food. Rare indeed is it that the condition cannot be corrected where the will to do it is present.

Another very common, and in the writer's opinion most serious, cause of increase in heart disability is the use of tobacco. On this subject there is of course a tremendous controversy. This is heightened by the fact that the great percentage of doctors use tobacco, some of them excessively, and hence are not unbiased observers. There is an interesting and significant parallel, however, between the tremendous increase in the use of tobacco since the World War and the alarming increase in cardiac deaths and disabilities during the same period. Tobacco is a direct cell poison. It is one of the strongest insecticides used in the war on insect life. A very tiny amount of nicotine will kill a dog or cat almost instantly. That such a poison as this can safely be used by the human body continually seems incredible, and yet there are thousands who maintain this to be a fact. Late experiments have demonstrated beyond a shadow of a doubt that a small amount of tobacco will cause the contraction of the vessels of the body, particularly the smaller ones, and there is one serious disease of the extremities, known as *thrombo-angiitis obliterans,* which means the gradual closing of the blood vessels of the part effected, and the general consensus of opinion now is that tobacco is one of the exciting causes, if not the cause, of this distressing condition. It is, of course, well known that many men smoke excessively throughout life and live to advanced age. The reverse of the picture is rarely quoted, that thousands of men are very susceptible to tobacco, and while they use it more or less extensively they are constantly paying a big price in physical impairment for this privilege. When heart disability or increased blood pressure develops, one of the first things required by practically all doctors is for the patient to completely give up tobacco until the acute stage at least is past. There is, of course, a great difference in the tolerance of various poisons by different individuals, and to this rule tobacco is no exception. Some people are very little affected by it and apparently use large quantities with impunity, but these are the exceptions. It would therefore seem wise, as people increase in years, that the amount of tobacco used should be very materially reduced if they are to maintain a normal degree of physical efficiency.

The above stated convictions are based on years of observation and are amply supported by many other observers. The following quotation is from Dr. Silbert, who says: "I take this opportunity to state my conviction that whatever the underlying cause, prolonged smoking is the immediate causative factor in the production of this disease. I have passed through the phases of skepticism in regard to the importance of smoking, and it is only after considerable clinical experience that I found that I could no longer disregard this outstanding fact."*

Dr. Buerger, who did much of the original work on *thrombo-angiitis obliterans*, so much so that the disease is usually called "Buerger's disease," writes in his book (1924) as follows: "As for tobacco, its influence has been recognized for many years. Erb, long ago, in papers written subsequent to his publication on intermittent claudication (spasm of the vessel walls), attributed extensive other sclerotic (hardening of the arteries) conditions of the lower extremities in the main, to the influence of tobacco. Just how far the absorption of tobacco poisons is responsible for the degenerative changes in the arterial walls cannot be determined accurately but that it may be safely regarded as a predisposing cause no one will venture to deny."

The above conclusions apply with equal force to patients with any form of heart disease or with elevated blood pressure.

A third great cause of breakdown which is not so common in the service as in civil life is the lack of consistent physical training. Where reasonable exercise is kept up, the body will stand enormous overloads for a time with apparently no damage. But where physical training is intermittent, even though at times it is of high excellence, damage is likely to result from a sudden physical strain at a time when the body is not prepared to meet it. This is particularly a physical sin of mid-life when men have ceased their active sports, have more than likely increased somewhat in weight and are oftentimes more or less confined by office work. It is easier to neglect exercise than other things apparently, and the time seems to be so occupied that there is none available for physical needs. But in the service particularly, we are expected to be able to meet these physical strains all the time. When the ninety-mile horseback ride came in vogue, a number of men who were apparently in good

*Silbert, J. A. M. A., September 17, 1927, page 964.

physical condition made no preparation for it, and, in addition to the great physical distress of such a ride by an untrained man, some really serious damage was done to the circulation by throwing this unaccustomed load onto it when it was unprepared to meet the strain. In early mid-life such strains may not be so serious but in later periods, especially about fifty years, such a sudden strain may produce an irreparable dilatation of the heart and consequently permanent invalidism. Fortunately physical exertions likely to produce such strains rarely come without notice in the service, as in the case of mobilization for war there is usually time to prepare fairly well physically for the probable unusual exertions. But it is highly desirable that we never repeat the "intensive training" of past years, either for officers or men, as it is entirely contrary to the physiological processes of the body to meet such exaggerated physical effort suddenly, and only youth can respond without damage.

Real disasters of this nature do not come so much in war-time as in times of peace, and they are most common when there is no need for them to occur. It is unfortunately a common idea that a large amount of exercise taken in a short time will compensate for systematic exercises consistently taken, and so the habit has grown up of attempting, in a day, to "catch up" on exercise for the past week or month. Perhaps the individual who tries this comes in completely exhausted, but he is at peace mentally with himself because he has balanced up his exercise account. Such strains come perhaps more frequently at the hunting season than at any other time. Men totally untrained start out on long and difficult hunting expeditions requiring mountain climbing or long paddling in canoes or horseback trips, when the body has been out of training for many years. Uusually they are too proud to admit that they are "soft" and therefore try to keep up, oftentimes with trained guides, and even urge the guides to greater speed in order to show their remarkable physical condition. The writer has seen such men come in totally exhausted with heart dilated and in serious physical condition from which recovery never took place. Deaths from such excursions are altogether more frequent than is usually known, as they are usually attributed to other causes, such as "acute indigestion." Space forbids further discussion of this subject, but enough has been said to indicate that much can be done to prevent damage to the circulatory system if the knowledge and will to do so are present.

We may, therefore, conclude that:

1. The best health can be maintained by constant moderate physical training with no peaks or depressions; physical breaks are disasters to individuals as well as families and a great loss to the government.

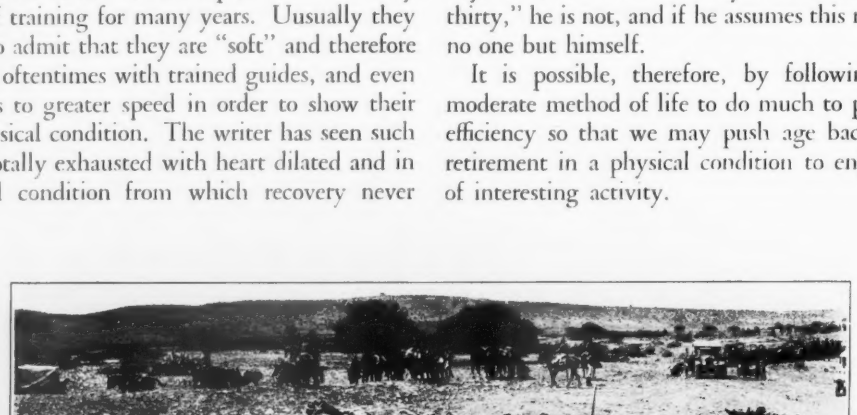
2. That overweight is a disaster but that it can be readily avoided by proper diet combined with sane exercise. Exercise alone is not enough nor is any system of medication or easy cure satisfactory or safe.

3. That the use of tobacco is clearly contraindicated in all damaged conditions of the circulatory system and that its moderate use produces much less damage than its continued or excessive use. When the excessive use of tobacco is combined with overweight, the nervous and circulatory systems are called upon to bear a burden entirely unreasonable and from which an early breakdown is to be expected.

4. That sudden and prolonged physical strains are highly undesirable and should be avoided whenever possible, especially by those in mid-life or later.

5. That the physical activities should be decreased with increasing years and no attempt made by the "old man" to keep up physically with the youngsters of his regiment. He may do it successfully for a little while, but it will damage him seriously without being of benefit to anyone else. While he may feel "as fit as he was at thirty," he is not, and if he assumes this role he is fooling no one but himself.

It is possible, therefore, by following a sane and moderate method of life to do much to prolong physical efficiency so that we may push age back and arrive at retirement in a physical condition to enjoy many years of interesting activity.



Musketry

By Colonel Laurence Halstead, Infantry

INSTRUCTION in the use of the rifle, in the Army, has become clouded because of an attempt to separate the several simple steps of training into distinct water-tight compartments which do not present a complete and balanced sequence, and which present difficulties when an attempt is made to fit them to the normal training schedule. Coupled with this is an incoherency engendered by the fact that the arbitrary terms "musketry" and "combat practice" seldom convey the same meaning to any two individuals.

Instruction in the use of the rifle has as its objective the development of a command of riflemen to that point where its commander may place the shot group of his command on any particular objective. With this idea in mind, we find that the logical definition of musketry should be that branch of military science that goes to develop a group of riflemen in the use of the musket in battle.

Naturally this broad definition will separate itself into two large sub-divisions—known distance practice and combat firing.

Known distance practice is that branch of musketry that is aimed to develop, in the soldier, the ability to shoot his rifle properly, at a designated object. This branch of musketry is thoroughly covered in Basic Field Manuals, is of intense interest throughout the Army, and is in danger of being overstressed through the increased pay allotted to those who show material excellence in it. This branch of musketry needs no further incentive toward its development.

Combat firing is that branch of musketry aimed at the further development of a group of riflemen in the use of the rifle on the battlefield. This branch of musketry is not covered in known distance firing. It comprehends the instruction of the officer, the noncommissioned officer and the soldier. It is far more difficult to learn, and far more difficult to teach than known distance firing. The difficulties to be surmounted are many—of these we may cite the fact that in known distance firing the soldier shoots at a clearly defined target, at a known distance, and the effects of his errors are signalled to him so that he may correct them. In combat firing, in order that, in some measure, actual battle firing may be simulated, the soldier should fire at an indistinct and partially hidden target, at an unknown range, and the effects of his errors are not signalled to him. Combat firing also is rendered difficult by the fact that in battle the soldier fires at an animate and possibly moving target, whereas it is not possible to furnish him with animate targets in combat practice. Motion of any kind is a great aid to picking up indistinct targets.

Combat firing is further rendered difficult by the fact that we cannot, in general, secure the necessary ranges on which to practice it. A range of diversified terrain is essential. The flat prospect of the ordinary known distance range is worthless. Battles are not fought on such terrain. What is needed, is as much broken and diversified terrain as one can obtain for the purpose. It may be as short as 500 yards and greater than 1,000 yards.

After the command has completed known distance firing the next step is to start training in combat firing. This training starts with the officer and the noncommissioned officer. The riflemen are charged with the duty of firing at a certain stipulated objective. If they are unable to do this they might as well not go any farther. It will be wasted effort. Methods have been devised in the Army during the past thirty years whereby a commander may designate the target to the men of his command, but these methods have not been taken as seriously by the bulk of Infantry officers as their importance warrants. In fact, many officers and noncommissioned officers, if they were suddenly put in a situation where they had to place the shot group of a section on some stipulated but indistinct objective, would be utterly at a loss as to how to proceed and the result would be that some riflemen of inborn intelligence would luckily get on the target but the greater number of them would simply waste their ammunition shooting up the landscape.

There is nothing particularly hard about designating indistinct targets to a command. There are methods of doing this set forth in our Basic Field Manuals. The fault lies in the fact that not enough insistance has been made by higher commanders that this highly important subject be thoroughly learned by the officers and noncommissioned officers and that the unit be thoroughly trained in the same.

The principal difficulty encountered, in a verbal description of a field target, is that due to the linguistic deficiencies of the average man to describe the target properly; and the same deficiency, on the part of the other party, renders him unable to understand the same. What is desired is that the commander of a unit be able to bring the eyes of his command to the target. It is not necessary, in order that the commander may properly place the shot group of his command, that the riflemen actually see the same, provided that they do see some object sufficiently near the target, so that the shot group will fall approximately on it when aiming either at the object or slightly to the right, left, over or below it.

In the first place, the men of the unit to be instructed must learn the definitions of the terms set forth in paragraph 6 *b*., Chapter 6, Part One, Volume III, Basic Field Manual. They must then learn, on the ground, what these things look like. They must then learn what they look like at a distance.

City-bred men do not see as well, at a distance, as those from the country. Their eyes are used to short distances. Many of our men come from the cities and, in consequence, targets, to be designated to them, as a matter of drill or practice, should be at far distances and more care given, at first, to these men. If targets can be picked up, designated and understood at distances from 1200 to 3000 yards, there will be no difficulty about their picking up the shorter range targets against which musketry is used in general. Targets, in war, will be indistinct, and consequently the practice targets used in target designation must also be indistinct.

After men have been grounded in the definitions above referred to, they should be taken to some place from which a good view of the surrounding country can be obtained. The instructor then picks out some indistinct target which he assumes to be the location of an enemy machine gun, a combat group or some element of the enemy position. This may be a spot on the side of a hill, a shrub, a rock, a small bare spot or some such similar object. Now the purpose is to bring the eyes of the trainees to this particular point as distinguished from the many similar points that will be found in the distance. This may be done by directing the attention of the men to some clearly marked, well defined object, in the distance, that we will call a "reference point" and then passing from that to some other object nearer the assumed target, then another still nearer the target, and finally the target itself.

At first it will be a tedious and time-consuming operation but as the system is used more and more the men become more and more adept at it and targets will be picked up with much less trouble and description. It will be found that as the command develops in this work the intermediate reference points may be reduced in number.

As a precaution against men misunderstanding one or more of the "stepping stones" that lead them to the target, it is well to have them "answer back" by mentioning some feature of a reference point that the instructor has *not* mentioned.

EXAMPLE

(See Figure I)

Instructor: "Reference point, that house on the hill yonder with the green shutters."

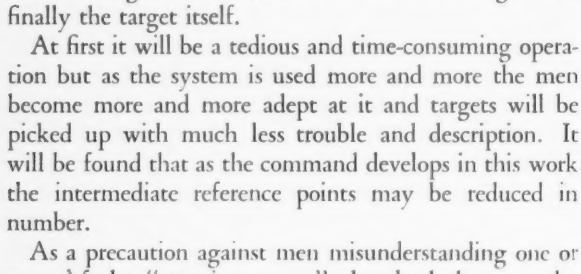


Figure I

Trainee: "The house with two chimneys and a green roof."

Instructor: "Look at the roof of the house—one finger directly to the right a tree in an open field."

Trainee: "The tree with a watering trough beneath the same?"

Instructor: "Look at the bottom of the tree where the trunk enters the ground, carry your eye horizontally to the right one hand breadth—a small bare spot in the field—nearer the fence to the right than it is to the tree to the left. That is the target."

Trainee: "The spot has two bushes below it, one exactly under it, the other slightly to the left."

To direct attention to the reference point in the beginning, recourse may be had to the horizontal clock system, but when this system is used, *always* point out 12 o'clock by some unmistakable object, two men standing side by side may often have rather widely divergent views as to where 12 o'clock actually is. This point is not mentioned in the regulations and as a consequence is generally overlooked.

Instruction in target designation may be varied greatly and made more interesting by causing the trainees to pick out and designate indistinct targets to the instructors. Emulation among the men to select and designate the most indistinct target can be created, and the ability of the trainee to point out the target, may be exercised and pushed to the limit, by the instructor purposely failing to recognize the target until the trainee has exhausted his ability to describe it. A curious corollary of this form of instruction is that the acuity of vision of the men can actually be increased.

This system has been used in training riflemen to pick up targets such as a particular window (assumed to be a machine gun emplacement) at a distance of over a half mile among the maze of buildings in a large city. The instruction can be given at odd times while at rest during drill, or while on the halt during a practice march. The whole point is that if the commander cannot direct the fire of his command to a particular target, the men will waste their fire power by shooting "into the blue."

The system is also useful in other field exercises than combat firing. It is of great value in pointing out landmarks to serve as company, regimental, brigade boundaries during an advance; the direction and path of a patrol across country; the point, in the rear, on which a patrol or command will assemble, if broken up by the enemy, and other useful military purposes.

A certain test can be given a command in target designation through the sand bag method. In this the instructor designates a target to the men of his command. Each man then points his rifle at the target while the rifle is laid on a sand bag. After the aiming process has been completed the soldier stands clear of the gun and the instructor takes his place, looks through the sights and sees for himself whether the proper target has been picked up.

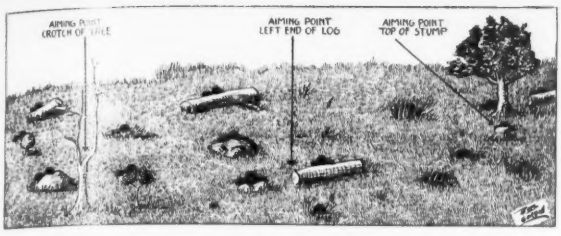


Figure II

After the foregoing instruction has been given the command, the next step is to give it a simple problem that will cause it, as a whole, to apply the instruction received in known distance practice coupled with target designation. This is combat firing. (See Figure II.)

The principal difficulty that a commander will encounter in a firing exercise is not the kind of exercise he will have but in getting the necessary terrain available wherein the exercise may be held, due regard being paid to the safety of people in the surrounding country. In some cases it is realized that the only terrain available will be the known distance range. In the general case this should never be used unless every endeavor has been made to secure and use some other locality. If it is absolutely impossible to use other than the known distance range the targets should never be placed on the target butts but they should be placed on the ground in front, or on some part of the back stop in rear.

A distinct line of silhouettes should never be used in any case. They should be staggered and well staggered. They should be camouflaged with hay, straw, brush, hidden behind bushes, rocks, boxes, etc. In fact every possible expedient should be used to make the targets exemplify as nearly as possible the "void of the battlefield." With all this there should, however, be enough visibility to allow the commander to pick the targets up with his field glasses. A command should not be pitted against an impossibility.

As before pointed out, it is not necessary that the individual soldiers actually see the silhouettes that go to compose the target. The ingenuity of the commander is tested in bringing the eyes of his men to the locality in which the target is located and then, by a proper assignment of aiming points and a careful estimation of the range, he can place his shot group where the silhouettes will be bound to come within its scope. This point is illustrated in the diagram in which a group of silhouettes is shown camouflaged so as to be practically invisible to the soldiers doing the shooting, but certain aiming points are given that will serve to distribute the fire over the locality of the target in such a way as to cover the same.

An advance against a target arranged as indicated in Figure II is very desirable but not an absolute essential. Its advantage lies in the fact that it causes the men to move forward thereby requiring them to fire under conditions more allied to the actual battlefield and it also causes them to see the same target from a different point of view. It is recognized that, in time of peace, an unnatural element is forced upon us by the fact that the command must advance as a unit—in other words, all firing ceases during the advance, a thing that in battle we could scarcely permit to happen but which safety precautions require in time of peace.

Squad practice, section practice and platoon practice at this firing are desirable for the purpose of allowing the squad, section and platoon leaders to try out their ability to designate targets but this is not absolutely essential. It is productive of increased expenditure of ammunition and practically the same results may be obtained by allowing the platoon leader to designate the target to section leaders, requiring them to redesignate their parts of the same to squad leaders and the latter in their turn to the men of their squads.

EXAMPLES

(See Figure III)

Exercise—This exercise is for the purpose of giving a platoon, section or squad leader the job of picking up a very indistinct target and concentrating on it the fire of his platoon, section or squad. Targets are placed at a distance of 600 to 800 yards, these may be a group of prone silhouettes so camouflaged by straw or brush that approximately only three of twenty can be seen by the aid of glasses.

The section or platoon is brought up to the firing point under the hypothesis that it is acting as an advance party of an advance guard. Arriving at the firing point the leader is informed that his party has been fired on from such and such a place (indicating the general direction of the targets). It is then required that the leader pick up the group of targets by means of his glass and direct the fire of his platoon or section upon it by using landmarks contiguous to the targets and so spaced along the front that the sheaf of fire will cover the entire hostile group. If troops are well grounded in the designation of distant targets and the leader is able to estimate the range properly, this proposition, while a difficult one, can be solved.

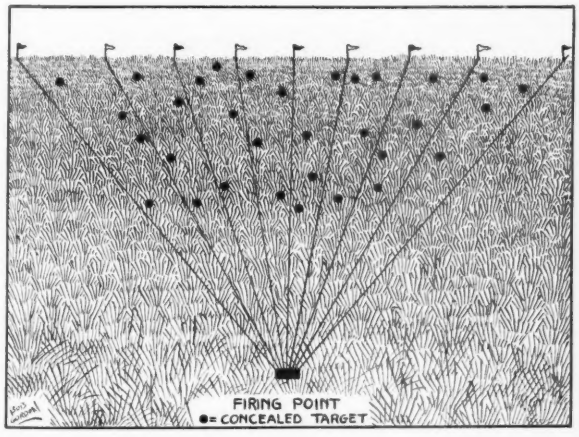


Figure III

Exercise—A group of silhouettes is set up as in the preceding exercise. A pit is dug slightly over to the right or left of the same; in the pit are placed two or three men with silhouettes on poles and armed with an automatic pistol. The attack progresses as in the preceding exercise, and at some point during the firing by the platoon or section the targets in the pit are held up by means of poles over the top of the pit exposing them to view; at the same time the automatic pistol is emptied rapidly into the ground. This forms a surprise target representing a machine gun or automatic rifle firing on the platoon or section somewhat from an oblique. If the leader is alive to his undertaking he will recognize the surprise target and direct his automatics or a portion of his riflemen to fire upon it.

The foregoing may be added to in accord with the advantages offered by the ground and the ingenuity of the instructor.

As a culmination of musketry and a method of instruction that goes to inculcate in the infantry soldier the desirable quality of being able to operate absolutely on his own, the following example, which like the others may be amplified by the ingenuity of the instructor, is given.

Exercise—If fairly broken ground is available, a point is selected from which ground to the front can be observed for a distance of 600 yards. The foreground is staked off by flags as shown in the sketch. In the sector between these flags, three, four or five targets are placed, staggered so as to present different ranges, and each target is camouflaged so that there will be difficulty in observing or picking it up. A squad of eight men is brought up to the firing point and each man issued twenty rounds of ammunition. The man on the left is told that his targets are between the first and second flags; the next man is told that his are between the second and third flags; and so on to the right. No man is told the number of targets in his sector but is informed that he must for himself pick up the targets, estimate the range to each, and expend his twenty rounds in such a manner as to hit each target.

* * *

Extracts from Leaflet No. 211, Horse and Mule Association of America

(Formerly Horse Association of America)

WAYNE DINSMORE, Secretary, Union Stock Yards, Chicago

WHEN the farmers produce more than can be consumed within a reasonable time, the desire of many farmers to convert their products into cash exceeds the desire of those who are the buyers of farm products to purchase. When one has enough to eat and wear, with a reasonable supply for days to come, he does not wish to buy more and will do so only if the inducement to buy is increased. In such circumstances farmers competing against each other offer their products at lower prices as added inducement to buyers.

There are but two ultimate consumers. These are man and the horse (includes mules—dogs and cats are disregarded; they live mainly on man's wastes). Other animals, cattle, sheep, swine and all poultry are but food factories, converting pasture, hay, forage, and grains into more concentrated, more palatable and more easily digested form for man. When either of these ultimate consumers decrease, surplus begins to accumulate.

Horses and mules have been decreasing in numbers since 1920, and as acreage in harvested crops has increased enough since then to care for the increase in human population, it follows that the decrease in horses and mules has meant an increase in surplus farm products. The decrease, which in round numbers is about ten million head, has thrown forty million acres of land into the production of surplus farm commodities. . . . The U. S. Department of Agriculture estimates for January 1, 1933, reported 12,163,000 horses and 4,981,000 mules on farms.

One thing is certain, and that is that increased use and production of horses and mules will help mightily in using up our accumulated farm surplus and in holding down future supplies.

Why did we have a decrease of 10 million head of horses and mules since 1920? Because farmers were sold on the idea that they could produce farm crops more easily and more cheaply by using motors and trucks than by sticking to horses and mules. The mere fact that this was not true made no difference. They were sold such equipment by high pressure sales methods, including easy credit terms, and were influenced to a great extent by the difficulty of getting satisfactory help at reasonable wages; so the farmer who used to work a 240-acre farm with 8 horses or mules and one married man who lived in a cottage on the farm shifted his methods. He sold one pair of work animals, bought a tractor and a truck, let the hired man go to town for a job, and took to operating the whole place with no help save his family. He also quit raising young horses or mules, because he thought there would be no future use for them. As a result we now have a decrease of 10 million horses and mules, an increase of 40 million acres of crops devoted to producing other farm commodities of which we already had enough, and a consequent piling up of surplus and decrease in price with all its attendant evils.

The farmer knows now that the ultimate cost of the farm tractor and truck is found in decreased prices for farm products; and he knows, also, if he thinks the thing out, that eventual reëstablishment of the balance between farm production and the demand for farm products will be hastened, if he begins using horses and mules for all farm work, induces merchants he trades with to use horses in city hauling, and starts raising colts enough to permit selling his older animals at six years of age, as he formerly did.

The Grand Strategy of the World War

From the Viewpoint of an "Easterner"

By Captain Gordon Gordon-Smith

PART III

WHILE the Serbian contingent was, as described in my second article, carrying out the operations which culminated in the capture of the Kaymakchalan, the giant mountain of the Moglene range, thus permitting the Serbs to debouch on the plain of Monastir, important events were taking place in Salonica.

On the right of the front the Bulgarians had begun an offensive, invading Greek territory in three main groups. On the eastern sector they advanced south from Demirhissar, the Greek troops withdrawing before them. The Greek forts of Lise and Starshiste surrendered without offering the slightest resistance. Two days later it was announced that the Vrundi Balkan (or Sharteya Planina) had been crossed and that the Bulgarians were advancing on Seres. In addition, on the eastern frontier, the Bulgarians crossed the Nestor (or Mesta Su) and sent forward an advance guard to reconnoiter the road to Kavala. Further west, in the central sector of the Vardar, the troops under General von Winckler pushed forward. For some time the enemy was held in check by the British troops, but after destroying a number of bridges these fell back to the Struma-Lake Tachinos line and left the task of defending Eastern Macedonia to the Greek Army.

The Prince Regent Alexander, Commander in Chief of the Serbian Army

Kavala was the Headquarters of the Fourth Greek Army Corps. The 6th Division, under the command of General Bairas, was stationed at Seres. In the temporary absence of that officer the Division was under the command of Colonel Christodoulou. The advanced fort of Phea Petra, on the road between Demirhissar and Krusávo, was the first to offer resistance to the Bulgarian armies. The Commandant of that fort, Major Kondhilis, refused to surrender it and lost his life in the attack by which it was captured. This gallant action on his part was not without its effect on the garrison of Seres. Colonel Christodoulou and the men of the 6th Division put up a good fight, inflicting heavy losses on the Bulgarians. The Greek losses were two officers and over 100 men.

When the news of this reached Athens, King Constantine immediately telegraphed orders that the Greeks were to cease all further resistance and Colonel Christodoulou was relieved of his command. The latter, however, succeeded in reaching Kavala with two regiments and there embarked on the British and French warships off that town.

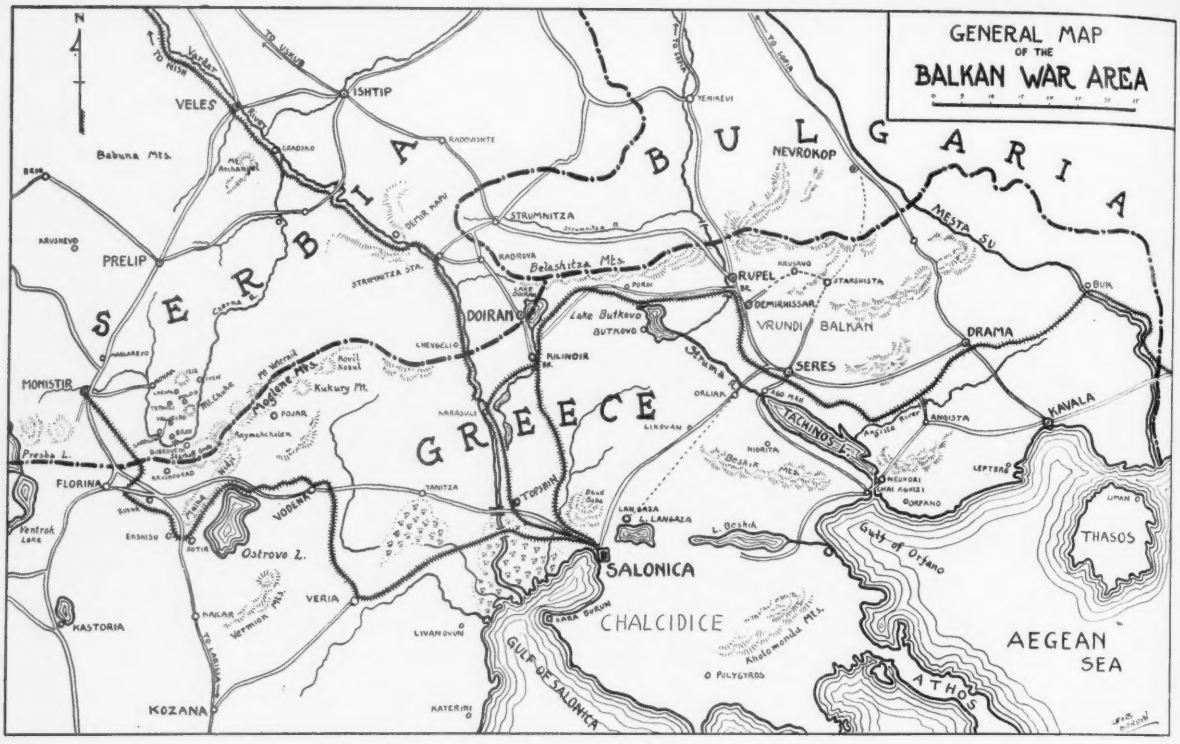
The Commander of the Fourth Army Corps, General Khatzopoulos, obeyed the orders from Athens and surrendered his whole command, 8,000 men, to the Bulgarians. This Army Corps was first interned in "honorable captivity," as the Germans described it, in Seres and later transferred to Goerlitz in Germany, where it remained until the end of the war.

This fresh act of betrayal by King Constantine was more than even the population of Athens could stand and a dangerous excitement made itself manifest in the Greek capital. In order to calm this and to conciliate the indigant but long-suffering Allies, the pro-German Chief of the General Staff, General Dousmanis, who had given the actual orders for the surrender at Kavala, was given 45 days leave of absence and his Assistant, Colonel Metaxas, was relieved of his functions.

The excitement, however, still continued and M. Venizelos and other patriotic leaders made violent protest against the King's action. M. Venizelos warned him that he and his friends would take steps to prevent the approaching catastrophe. He with General Danglis and Admiral Koundouriotis then left Athens for Crete where they proclaimed a revolution.

In Salonica the excitement was even greater than in Athens. Indignation meetings were held daily at the White Tower and on August 30th things came to a head. The Cretan gendarmerie and other military forces revolted, proclaimed a revolution and took over the city. The Greek regiment in garrison surrendered and was disarmed and shipped off to Athens. Two days later M. Venizelos, General Danglis and Admiral Koundouriotis arrived in Salonica, took over the Provisional Government and declared war on Bulgaria, thus becoming the ally of the Entente Powers.

This greatly clarified the political situation in Salonica but there was unfortunately no great improvement in the military and strategic situation. It was notorious that in London and Paris diametrically opposing views were held regarding the Salonica front. The British Imperial Staff regarded it as one of secondary importance to be



held down to a minimum. Military writers in London referred to it contemptuously as "the Salonica side-show". Things had even reached a crisis at an early stage when Lord Kitchener, on his way home from an inspection of the Gallipoli position, paid a visit to Salonica and on his return to London, flatly advocated the evacuation of Salonica. It required the energetic intervention of Marshal Joffre in London to prevent this disastrous proposal being carried out.

With a view to killing all interest in the Salonica front the British authorities ordered all the English newspaper correspondents to leave, with the exception of Mr. Ward Price, representing the Associated Newspapers of London, and Mr. Ferguson, the correspondent of Reuter's Agency. They were "personally conducted" in British staff cars when visiting the front and their dispatches were severely censored. On arriving in London these were censored a second time and sometimes entirely suppressed. This had the result that the Salonica front practically disappeared from the columns of the British press. The "man in the street" knew nothing of it and cared less. Reinforcements were reduced to the absolute minimum, making Salonica the "Cinderella" of the war fronts. On account of the weakness of the Army of the Orient no success could ever be followed up.

Then there was trouble in the French High Command. During the operations at Florina there had been such a violent dispute between General Sarrail and General Cordonnier, the commander of the French contingent, that the latter handed in his resignation and left for Paris, where he laid his views before the Government. General Sarrail, however, having the cable at his disposition, got his views in first, so that the Government found itself in a complete quandry, being in possession of two diametrically opposing reports on the situation in Salonica.

In order to obtain first hand information, the Government instructed General Roques, the Minister of War, to take ship for Salonica and examine the situation on the spot. No hint of his journey was allowed to transpire with the result that he arrived at Headquarters in Salonica "like a bolt from the blue". He at once began his investigation. With General Sarrail he visited the whole front and heard his views. His decision was, on the whole, favorable to General Sarrail but he informed him at the same time that the Allies expected results and warned him, if he wanted to retain his position, that he would have to justify the existence of the Army of the Orient by some success.

The French Commander-in-Chief thereupon decided to capture Monastir, the most important city in the hands of the enemy. He asked Prince-Regent Alexander if the Serbian Army would undertake the task. This Prince Alexander consented to do on condition that the Serbian Army was reinforced by a French division and the Russian contingent and that the supreme command of all these forces should be in the hands of Field Marshal Misitch, one of the most brilliant soldiers in the Serbian Army.

The task was a difficult one. It meant dislodging the enemy from strongly fortified mountain positions with a force inferior in numbers. This series of operations was

one of the most brilliant in the whole military campaign.

They began on October 11, 1916 when Field Marshal Misitch's army crossed the Czerna Reka between Dobroveni and Brod. On October 17 the villages of Voljesdo and Brod were captured. Two days later the capture of Bardilovo threatened to cut off the Bulgarian retreat and they fell back precipitately, pursued by the Serbian cavalry, uncovering the route to Monastir. But until the enemy was driven from the mountain positions to the west it was useless to try to profit by this success.

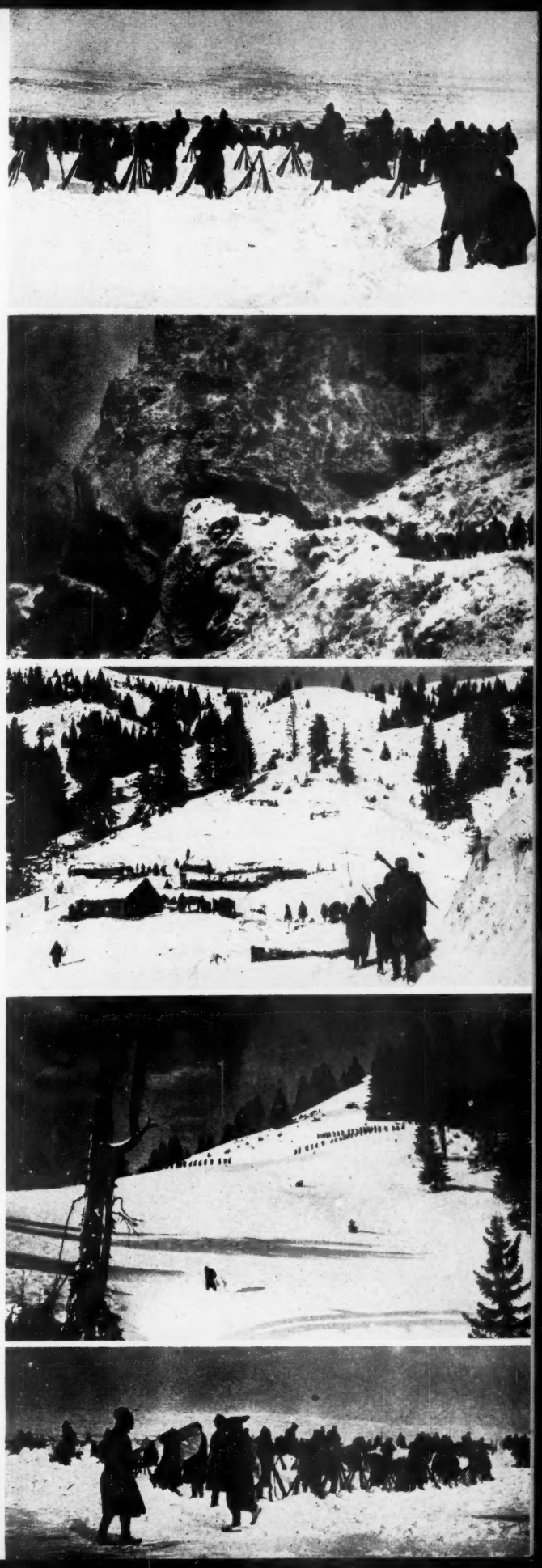
The first Serbian Army then pushed north from Gardilovo, capturing a number of guns and over a thousand prisoners. On November 9 the Serbs captured the heights of Mount Chuke and the village of Polog. A Bulgarian counter-attack failed completely, the Serbs taking nearly 1,000 prisoners, mostly Germans. The village of Iven, further north, was then taken, followed by the capture of Tepavci and Chegel and the victorious Serbs pushed forward to the 1212-meter hill, the key position, on which the fate of Monastir depended. This was carried by an attack with the bayonet by the Serbs and the 2nd Regiment of Zouaves of the French division.

This success rendered Monastir untenable and twelve hours later the German-Bulgarian Army was pouring across the Czerna Reka at Novak in full retreat. The victorious French, on November 11, marched into Monastir with bands playing and colors flying. The Serbs, however, wanted to share in the honor of the capture and the 4th Regiment of Cavalry swam their horses across the Czerna Reka and galloped to the town, the dripping troopers entering it from the north at the same moment that the French entered it from the south.

This closed as brilliant a series of operations as was fought on any side in the World War. But, unfortunately, with this effort the Army of the Orient had "shot its bolt". It had no reserves to follow up the fleeting enemy and turn their retreat into a rout. King Peter's gallant army had again fought itself to a standstill. The men of the First and Third Armies had, by five weeks of ceaseless mountain warfare, reached the limit of human endurance.

As a consequence the enemy retreated, practically unmolested, in the direction of Prelep, where they again proceeded to entrench themselves and the whole weary game of trench warfare began afresh. The war on the Salonica front had again resolved itself into a position of stalemate which was, on account of the conflicting views of the Allies, destined to last nearly two years.

Meanwhile a similar condition prevailed on the other fronts of the World War. On the western front the struggle swayed back and forth, each side losing enormous masses of men in an effort to break through the line of hundreds of miles of blood-drenched trenches. On the Russian front the Germans and Austrians had bent back but had not broken the line in Poland. On the Izonzo front the Italians, after eighteen months of fighting, had hardly pushed forward a score of miles into enemy territory, the strong Austrian positions along the mountains



Scenes from the Serbian retreat through Albania

effectually checking the Italians' further advance.

In Palestine General Allenby, aided by the Arabian revolt engineered by Colonel Lawrance, was just holding his own against the German-led Turkish forces. The war had resolved itself into one of attrition, without any prospect of either side scoring such a decisive victory as would enable it to force the surrender of its adversary.

The life-line of the Central Powers was the Berlin-Constantinople railway. Scores of German functionaries had been sent to Serbia, Bulgaria, Roumania and Asia Minor. The whole territory had been cut up into divisions like a chess-board and from these a stream of food-stuffs and raw material was being poured into Germany, to support the armies in the field. The famous copper mines of Bor in Serbia and the chrome mines near Uskub were being worked night and day to keep the Krupp Works in Essen supplied.

Fieldmarshal Buyovitch,
Serbian Chief of Staff during the Salonica Campaign

The possession of the Dardanelles enabled the Central Powers to maintain their stranglehold on Russia and completely isolate that Empire from all communication with her Allies.

Only one front, that held by the Army of the Orient, was in a position to strike a mortal blow at the Central Powers and cut the life-line between Berlin and Constantinople. But that front, because of the failure to reinforce it, was reduced to the same position of stalemate as the others and the war dragged on month after month.

Some four months after the capture of Monastir I was with the Staff af the Morava Division, in the village of Iven, perched among the snow and ice on a wind-swept mountain summit, when Colonel Panta Grouitch, the commander of the Division, received notice that the Prince-Regent, accompanied by General Terzitch, Minister of War and Field Marshal Misitch, who were on a tour of inspection, would visit the Headquarters the next day.

After lunch in the mess tent the following day I was speaking with General Terzitch regarding the campaign and asked him, "Are we going to have an energetic offensive this spring, General, and break the enemy line"? At this point Prince Alexander broke into the conversation and said: "No, no, that is not the intention of the Entente Powers. The Salonica front is regarded as a front of secondary importance. Its mission is to draw down as many enemy troops as possible, immobilize them and prevent their being used elsewhere. There is no intention of taking the offensive."

"That, Your Royal Highness, seems to me a most curious point of view", I replied. "In my opinion there is no front in the whole war where such tremendous results, strategic and political, would follow a successful offensive."

Prince Alexander laughed. "I see that and you see that, but try and get the Imperial Staff in London to see it. When I was in London I discussed the whole question with Lord Kitchener and Sir William Robertson, Chief of the Imperial Staff, for two hours. They listened to me very politely but maintained their point of view. Since then I have sent telegram upon telegram, dispatch upon dispatch, but without effect".

Some days later I was called to London on urgent private business. Before I left I had another interview with the Prince Regent and offered to do my best to find out what were the reasons for the British objections to the Salonica front. The question was rendered the more acute by the fact that Lord Northcliffe's paper, the *Daily Mail,* had on, January 18, 1917, published an article proposing the evacuation of Salonica by the British forces. As this article had been passed by the British military censor, it caused the worst possible impression in Paris.

On my way to London I stopped at Paris, where I had lived for years before the war, in order to inform myself thoroughly of the French attitude towards the Salonica front. Here I discussed that front with M. Stephen Pichon, former Minister of Foreign Affairs and then editor-in-chief of the *Petit Journal,* with Senator Humbert, President af the Committee on Military Affairs of the Senate, with General Malterre, the famous French military writer, with the Russian General acting as liaison officer at the Inter-Allied Headquarters, and with a score of other important Frenchmen. I found them unanimous in favor of an energetic offensive by the Army of the Orient and equally unanimous in deploring the shortsightedness of the British military authorities.

Finally I had an hour's talk with M. Aristide Briand, the French Prime Minister. When I urged to him the importance of the Salonica front he smiled and replied, "my dear Mr. Gordon-Smith, you are 'preaching to the converted'. It was I who sent the Army of the Orient to Salonica and have kept it there. If you see Mr. Lloyd George in London you can tell him from me that I am more convinced than ever of the importance, strategical and political, of the Salonica front." It was therefore, clear that there was a complete conflict of views between the French and British General Staffs.

A few days later I was in London and found myself face to face with a stone wall. The public knew nothing about the Salonica front and cared less. Except for an occasional paragraph all mention of it had disappeared

from the public press. Strange to say, the only man in public life who seemed to have a proper comprehension of its importance and possibilities was Mr. John Dillon, the leader of the Irish Party in the House of Commons. He had made a strong speech in the House, denouncing the inaction of the Army of the Orient and the attitude of the British military authorities toward it. I imagine that it was the presence of the Irish Division at Salonica which had aroused his interest in that front.

The only organ of public opinion which dared to reproduce this speech was the *New Europe,* edited by Dr. Seton-Watson, one of the few men in England who had a thorough knowledge of the Balkan situation and a realization of its importance in the strategical situation.

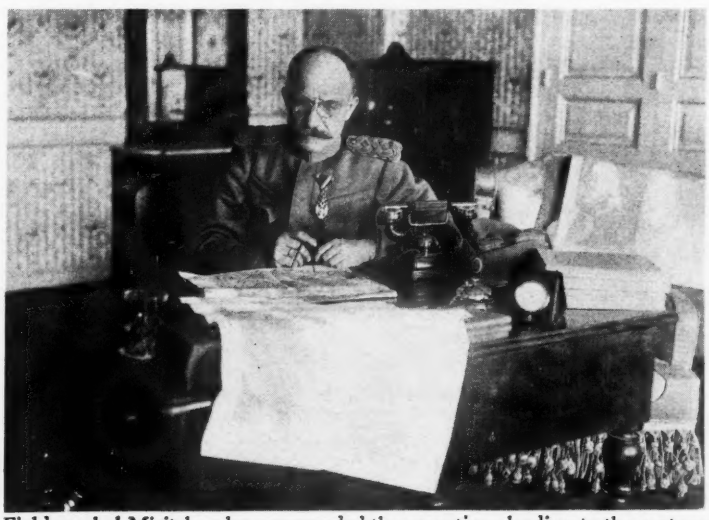
One of my first visits was to Lord Northcliffe. Though the war policy of the *Times,* the *Daily Mail* and the other journals he owned had been completely "Western" and had completely ignored the Salonica front, Lord Northcliffe was a man who was always willing to hear both sides. I had several talks with him. As a result of these he consented to have an editorial written for the *Times,* pointing out that there was a Salonica front on which were 400,000 men and asking what were its *raison d'etre* and the reasons for its non-activity. Beyond this, however, he would not go. I, therefore, proposed that he should let me write a letter to the Editor of the *Times* and state the case for the Salonica front. To this he consented and this I did in terms of extreme moderation. Two days later, however, I received a note from the Editor of the *Times* stating that my letter would first have to be submitted to the War Office. The next day I was informed that it had been suppressed from the first line to the last and returned to the *Times* with the intimation, "not to be published" stamped on every page.

My final interview was with Lord Milner, Minister of War. As Lord Milner had been for years British High Commissioner in Egypt, he knew the Near East well and could thoroughly appreciate the importance of the Balkan Peninsula in the struggle. He advanced many of the stereotyped arguments of the opponents of the Salonica front, its excessive demands on tonnage for forwarding reinforcements and supplies, the danger from submarines, the unfavorable climate, etc. But reading between the lines it was soon evident where the real difficulty lay. It was at that time an open secret that, on account of the flagrant mistakes of Mr. Asquith and the other political men in charge of the war, they had completely lost the confidence of the nation at large and that the conduct of the war, not only militarily but also politically, had passed completely into the hands of the soldiers. The War Office and the Foreign Office were completely at loggerheads and the Imperial General Staff turned a deaf ear to all the counsels which did not square with its preconceived views.

General Sir William Robertson, Chief of the Imperial Staff, and all the men surrounding him were out and out "Westerners" and refused to listen to any proposals for undertaking an offensive anywhere except the Western front.

When Mr. Lloyd George succeeded Mr. Asquith as Prime Minister he saw that it was absolutely necessary that the civil power should regain the political conduct of the war. It was, however, only after weeks of sapping and mining that the civil power was able to assert itself once more. Mr. Lloyd George planned in secret the organization of the Supreme War Council at Versailles. It was arranged that he and M. Clemenceau and Signor Orlando, the Italian Premier, should meet every fortnight at Versailles to take counsel on the conduct of the war.

When the organization of this council was intimated to General Sir William Robertson he at once, in protest, tendered his resignation which (probably much to his surprise) was promptly accepted. Colonel Repington, the military writer, formerly of the *Times* but then of the *Morning Post,* who was generally regarded as the spokesman of the Imperial Staff, an out and out "Westerner", to whom the Salonica front was anathema, rushed into print with such a want of moderation of language that both he and Mr. Gwynne, the Editor of the *Morning Post,* were promptly haled before the courts and fined a hundred pounds each under the Defence of the Realm Act. Then General Sir Frederick Maurice, Chief of Operations, entered an equally violent protest, which cost him his position.



Fieldmarshal Misitch, who commanded the operations leading to the capture of Monastir

General Sir Henry Wilson was then appointed Chief of the Imperial Staff. He had for years been a close friend of Marshal Foch, and he saw that the only means of winning the war was to have a supreme Commander-in-Chief and create a complete unity of command. He, therefore, soon proposed Marshal Foch for the

post and the proposal was accepted by all the Entente Powers.

One of the first results of this was a complete *volte-face* in regard to the treatment of the Army of the Orient. The new Commander-in-Chief knew that the Balkan front was the "Achilles' heel" of the Central Powers.

He recalled General Sarrail and replaced him by General Guillaumat, an officer known for his energy, his decision of character and his powers of organization. His orders were to prepare the Army of the Orient for an immediate offensive. The necessary reinforcements and supplies were sent out and in a few weeks General Guillaumat was able to report that everything was in readiness.

As soon as this news was received Field Marshal Foch sent General Franchet d'Esperey, one of the most brilliant commanders in the French army, to take supreme command. An energetic offensive was at once ordered.

The chances of its success were greatly increased by the fact that the United States had entered the war and disembarked several hundred thousand men in France. As a consequence the German armies on the Western front were so hard pressed that they could not detach a single army corps to reinforce the Balkan front.

As before, the chief attack was entrusted to the Serbian contingent. Reinforced by several French Colonial Regiments they attacked, with splendid *élan,* the Bulgarian entrenchments on the Dobra Polje, drove in the centre and then rolled the opposing army up right and left. Through the breach thus made poured the British, French, Italian and Greek contingents, the retreat became a rout and in five days the Bulgarian army capitulated.

The Serbs continued their victorious advance, the Berlin-Constantinople Railway was cut and the Army of the Orient pushed forward to the Danube. In a fortnight's time Turkey collapsed, the Dardanelles were opened and the Allied fleets entered the Black Sea. Austria-Hungary, menaced by the attack of the victorious Army of the Orient and the Italian armies in the Trentino, saw the game was up and sued for peace in her turn.

As soon as the German Imperial Headquarters received the news that the Bulgarian line was broken it realized that the end had come. In the first days of October, 1918, General Ludendorff sent Major von dem Busch to Prince Max von Baden, the Imperial Chancellor in Berlin, to inform him that defeat was impending and told him to apply at once for an armistice. General Ludendorff stated that the troops on the Western front were still capable of resistance but as the Army of the Orient, plus the Italian Army on the Izonzo front, were marching on Germany, that empire would be attacked on the rear without any possibility of defense.

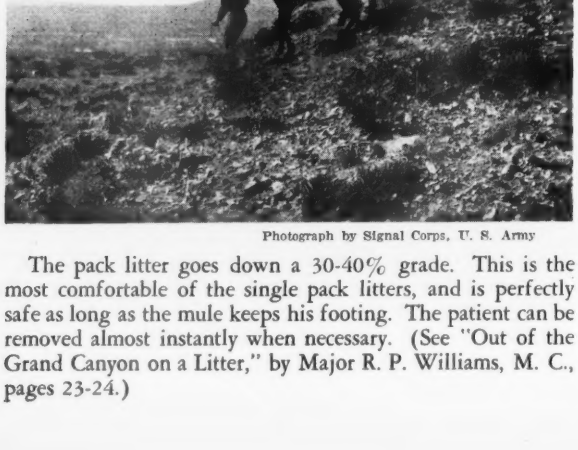
On October 12 the demand for an armistice was presented to President Wilson through the Swiss Legation in Washington. This was referred to the Allies but its terms were not deemed satisfactory and it was refused. As a consequence hostilities on the Western front continued until November when a second armistice was proposed and this time was considered satisfactory and it was signed on November 11, 1918.

Thus, by the victory of the Army of the Orient, the World War, which began in the Balkans, for the Balkans, ended in the Balkans.

* * *

Advantages of Oat Crushing

Reports to the office of the Chief of Cavalry indicate that the Gibson Oat Crusher gives very beneficial results, if it is constantly and conscientiously used.



Photograph by Signal Corps, U. S. Army

The pack litter goes down a 30-40% grade. This is the most comfortable of the single pack litters, and is perfectly safe as long as the mule keeps his footing. The patient can be removed almost instantly when necessary. (See "Out of the Grand Canyon on a Litter," by Major R. P. Williams, M. C., pages 23-24.)

Why Not a Command Eligible List?

By Lieutenant Colonel Bernard Lentz, Infantry

IT has at times been seriously proposed to create a Command Eligible List. We have a General Staff Eligible List. If the latter why not the former?

A Command Eligible List could be brought about by amending the National Defense Act. Following closely the construction of the General Staff Corps Eligible List law such an amendment might read something like this: "After the completion of the initial *Command Eligible List*, the name of no officer shall be added thereto, unless upon graduation from the (here enter the school desired as an intellectual hurdle) he is specifically recommended as qualified for command duty, and hereafter no officer of the Command Corps shall be assigned to (here enter the size of command deemed suitable) unless he is a graduate of the (here enter another, a higher, school as a hurdle) or his name is borne on the initial Command Eligible List The Secretary of War shall publish annually the list of officers eligible for command duty and such eligibility shall be noted in the Annual Army Register."

Of course if a Command Eligible List were established, there would soon be found proponents for an Administrative Eligible List and a Technical Eligible List and maybe some other Eligible Lists. But no matter how many Eligible Lists were established, by law or otherwise, there would no doubt always be some not on any list whatsoever unless they went, by a process of elimination, on the Class B Eligible List.

In these days when so many officers serve such long periods on other than command duties it is considered fitting to dwell somewhat at length on the importance of this class of duty.

Hannibal was a commander. Hannibal used elephants against the Romans with telling effect; this was so because Hannibal was Hannibal. Alexander the Great, too, was a commander. The Persians' use of elephants against him proved worthless; this was so because Alexander was Alexander.

In Simes Military Guide published in 1776 we read: "The more generals there are at the head of our troops *capable of commanding*, the more formidable they are. It was not the number of soldiers that gave us those laurels during the last war under the commands of Ferdinand, Wolfe, Granby, Albemarle, Amherst, Hodgson, Moncton, Murray, Draper, et cetera, it was owing to their military capacities to form, and resolution to execute the greatest designs—their penetration to discover and activity to defeat, the greatest machinations and to the unshaken confidence of a few troops—that obtained those glorious, surprising and complete victories."

Napoleon emphasized the importance of command when he made the observation that any fool can make an obvious strategic plan but that the capacity of the strategist is seen in the power to carry it out.

In the report of the Inspector General ending June 30, 1931, we read: "There is a growing tendency in the Army to recognize school service as of greater value than duty with troops. There is a danger that the present practice, whereby officers remain away from all contact with troops for years while they are successively students and instructors in one school after another will result in the development of a professional class of instructors more eloquent in the exposition of military theory than expert in the practical duties of command and leadership."

I have been unable to find anywhere statements in behalf of General Staff work that can approach in conviction the volumes of testimonials that have been written on the importance of command duty. In view of this, I suppose we should almost jump to the conclusion that having a General Staff Corps Eligible List we should, by all means, have a Command Eligible List. But let us not draw conclusions too quickly, at least not until we say more about the General Staff.

It is true that for a generation after the Austro-Prussian and the Franco-Prussian wars the Germans glorified the General Staff, and some of the glorification spread to other countries. And there was real reason for some of the glorification. Count Helmuth Karl Bernhard von Moltke had been a great Chief of Staff. The Austrians and the French had been defeated with ease. The story, how old von Moltke (awakened from his sleep about 1:00 a. m. and told that war had been declared) directed the assistant to get certain papers from a certain drawer of a certain file case and follow the instructions given therein and then turned over to sleep until morning, spread near and far. No doubt since Moltke could do this, other aspirants for high military honors in Germany and in other countries felt that they could do likewise, and so the General Staff idea gained tremendous momentum in almost all military circles.

But let us recall the picture a litle more vividly. Von Moltke was Chief of Staff to King William of Prussia. The King was reputed to have been a modest man and to have known the limits of his faculties. The story was told that he once said to his brother, "If I had not been born a Hohenzollern I should have been a sergeant major." Whether or not the story was true there was hardly a doubt that the King needed a good Chief of Staff.

From a book *The Brains of an Army*, written several decades ago by Spencer Wilkinson, we get an interesting history of the development of the General Staff idea. The author shows that the General Staff idea took form in Germany a long time ago. He points out, for example, that the Prussians fighting Napoleon had no Napoleon to pit against him. That the best they could do was to put Blücher in command, with Scharnhorst, and after Scharnhorst's death Gneisenau, to keep him straight. He adds that it might perhaps have been better to have

given Scharnhorst and Gneisenau the actual command.

The above-mentioned cases as well as other later ones, were probably in General von Seeckt's mind when he said: "The necessity for giving powerful support to these hereditary Generals became self-evident."

All this recalls the observation made in a recent volume on Richelieu: "When the master is incompetent it is of great value to the servant. When the master recognizes his own incompetence, it is more valuable still." I am convinced that at least one important reason for the development of the General Staff idea in Germany was the incompetence of the hereditary masters.

It is my opinion that the Austrians and the French were defeated so easily because the elder Moltke was first and foremost a great commander, who, in addition to filling the job of Chief of Staff, was "doing the driving from the rear seat" with the King "at the wheel." And I further believe that there were a lot of other German General Staff officers who as "rear seat drivers" really did the commanding.

Now let us shift the scene. In 1914, Helmuth Johannes Ludwig von Moltke, nephew of the Elder, was Chief of the German General Staff.

Von Kuhl, the capable Chief of Staff of von Kluck's army, says: "The 1914 campaign in the west was lost through faulty leadership. . . . not the system, the personalities who lead—failed." And von Seeckt brings out a similar thought when he comments: "Perhaps in an age when so much was done to develop the General Staff too little was done to extend the training of commanding officers."

I have no intention of criticising the General Staff idea; it's good, it's absolutely essential for modern armies. But there is such a thing as over-emphasizing "staff," which may result in under-emphasis on "command". A General Staff Corps Eligibility List may bring this about and to even things up, again, we might jump to the conclusion that there should also be a Command Eligible List. I think this is what its proponents have in mind.

All preferred lists, no matter how enviable their intent, have inherent something of the nature of mechanized procedure. Such mechanized procedure, in attempting to measure the human being, often becomes the end when it was only intended to be a means to an end. As time goes by too many on the preferred list may get the idea that they are "sitting pretty" and may be content to rest on their oars.

John Quincy Adams in his interesting diary describes one man by saying: "the mediocrity of his talents has been one of the principal causes of his success"; and another as, "a man of good breeding, inoffensive manners and courteous deportment, rather than one with the genius of Shakespeare, the learning of Bentley, the philosophical penetration of Berkley or the wit of Swift." Such men as Adams described will inevitably be found on preferred lists when such lists are—as they must be—the result of mechanized procedure.

I have long thought that making our schools the hurdles for General Staff Eligibility was a mistake, for the reason that the student is likely to feel that he had better accept what is given out as doctrine or he may find himself not on the eligible list when the course is over. The measure of a school is not in what the student does in school so much as what he does after he leaves school —the result of the stimulation of his thinking machinery received while a student. Our schools should be divorced from all special eligibility provisions as an encouragement to true education.

Ambition has been defined as the desire to do two things at once; first, to achieve; and second, to gain the reputation for achievement. Were the aforesaid adviser and advisees thinking mainly of the first? Was their main objective achievement in the field of real military education? Or were they visioning the second—the reputation for achievement, as linked to "eligibility" and the recording of the fact of graduation from school where all might read?

How does the above quoted advice to prospective students harmonize with the ideas of the late General John F. Morrison as expressed many years ago? In his introduction to *Seventy Problems* (1914) he said: "The main need of our officers is a knowledge of the fundamental principles of tactics and how to apply them. The knowledge is to be gained not by studying rules, formulæ or normal schemes but by practice in solving problems. Such practice combined with knowledge of human nature and *common sense* is what makes the tactician." One of his former students told me that General Morrison used to add to the above "And the last named—common sense—is rather rare."

Special eligibility lists also tend to lower the value of our efficiency reports. On this point I recently wrote, "the efficiency report will not be the worthy document that it should be until we make it the one and only report to which we turn whether we are trying to determine Class B or are considering a fine detail, even one to the General Staff."

My answer to the question propounded in the title to this article is—repeal the General Staff Eligibility Law. When this is done sufficient emphasis will shift to "command" so that a Command Eligible List will not be needed.

In conclusion, I want again to make clear my position. I'm not favoring "command" above "staff" nor "staff" above "command." My solution—no eligibility laws—is based on a text from the Sermon on the Mount: "By their fruits ye shall know them;", not alone by the fruits —the eligibility plums—gathered in schools but also by the fruits which have been picked in the orchard of practical experience.

What Should the Soldier Eat?

By Major Reuben Noel Perley, Inspector General's Department

DIET planning is a woman's job—in the home. In the army (which is feeding hundreds of thousands of men each summer) it is a man's job. As the health of the country is involved, it would be desirable if a considerable number of young officers selected practical nutrition as a hobby.

The Army's dietary practices have improved by leaps and bounds in recent years. However, there is room for improvement, principally in the direction of codifying correct practices, or, to use a military phrase, of consolidating the position already gained. The purpose of this brief article is to outline certain facts and principles which should be always at the mess officer's finger tips.

It is desirable for good health that the nutrients entering the bloodstream be in the approximate quantities and proportions required by life processes, otherwise the organs of elimination are overworked in disposing of unneeded substances. Persistent overload cause these organs to malfunction with a resultant impairment of health.

The bloodstream is slightly alkaline, therefore the diet should be slightly alkaline. Sulphur, phosphorus and certain other minerals are acid forming. Calcium, potassium, magnesium, etc., are alkali forming. Which of these predominate in a food will determine whether it will be acid or alkaline in ash residue. In practical nutrition we need only know that—

a. Proteins—i.e., meats, fish, fowl and eggs—are acid;
b. Cereals — breakfast cereals, breads, flours, meals, corn, rice, wheat, hot cakes, macaroni, plain cakes, etc.—are acid;
c. Fruits (except prunes which are slightly acid), *d* vegetables and *e*. milk are alkali.

Obviously the nutrient content of fruits, vegetables and milk should exceed that of meats and cereals.

These considerations throw a new light upon the following rules of diet:

Rule 1. Standardize upon a definite and moderate amount of meat per day.
Rule 2. Serve three vegetables at dinner and two at supper; favor green and yellow vegetables.
Rule 3. Eat one uncooked vegetable each day.
Rule 4. Serve fresh fruit (or their juices) for breakfast and a second fruit during the day.
Rule 5. Serve "protective" foods on an organized schedule of frequency.
Rule 6. Drink a minimum of one pint of milk per day.
Rule 7. Eat plentifully of butter and eggs.
Rule 8. Consume no one nutrient to excess.
Rule 9. Do not serve *in the same day,* all (or a majority) of the following cereal foods, viz.—hot cakes, toast, breakfast cereal, corn (as a vegetable), rice pudding, bread, macaroni, corn bread, and cake. They are all acid-forming.
Rule 10. The milk, fruit, and vegetable content should exceed the meat and cereal content of the diet.
Rule 11. Eat about the same quantity per day and this quantity should not vary unduly in liquid content.
Rule 12. Do not eat to excess.

It is desirable that the total bulk consumed per day be approximately constant, assuming an unchanging work program, and this includes a reasonably uniform distribution between liquid and solid foods. The foods on the table should evidence plenty of color especially of green and yellow.

It is not necessary to memorize much about proteins (meats). They are consumed in body growth and repair. A great variation in the day by day consumption of protein is more harmful than a uniform excess. A heavy meat dish for dinner, a light meat dish for supper, and eggs for breakfast are normal. Proteins are acid forming due to their high sulphur and phosphorus content. They are practically devoid of roughage.

Carbohydrates and fats may be dismissed from consideration as separate nutrients in practical nutrition by regulating the total caloric value of the diet. Neither should be consumed in excess. Pure fat is more than twice as fattening as pure sugar. (Fat officers take warning.) Carbohydrates and fats alike are consumed in furnishing energy and heat to the body. Surplus of these nutrients is deposited as adipose tissue to the embarrassment of many, especially the ladies.

Vitamins are as important as they are minute in quantity. They are essential growth factors and essentials to compounds of which the body is constructed. In a practical nutrition, knowledge of deficiency diseases is not as important as knowledge of the principal "protective" foods which supply the vitamins, as follows:

Principal protective foods:
Milk.
Butter.
Eggs.
Protective meats:
Liver (and other visceral organs).
Best protective fruits (or fruit juices):
Oranges.
Grapefruit.
Bananas.
Best protective vegetables:
Tomatoes (any form).
Spinach (any form).
Cabbage, raw.
Lettuce, fresh.
Green peppers (not popular).
Peas (any form).
Carrots (any form).
Green Beans (any form).

For maximum health security the above protective foods

Day of Week - - Monday
Date - - - - - - 2nd Day
Number Being Fed 100
Value of Ration - $40.00 (40 cents per man)

PERLEY'S
Blank Form for Menu Development or Analysis

Index Captions
For Use In A—12—36—68
Permanent Filing B—20—35—63
Of Menus C—04—29—06
D—29—00—40

Classification of Food Stuffs — Index to Tables of Food Values	MENU	Cost and Quantity Data: Quantities Required by 100 Men — See Tables	Quantities Required by Actual Strength of Mess	Cost in Money	Cost in Valuators (1 Per Cent of Ration Money Represents 1 Valuator)	Nutrient Content Data—For Critical Nutrients Only: Figures Show What Percent (%) of Daily Requirements the Indicated Foods will Contribute to the Diet: ALKALINE ACID BALANCE	BULK WEIGHT	PROTEIN	CALORIES	CALCIUM	Phosphorus	IRON	VITAMINS (Figures Show Only the Relative Strength of Vitamins): A	B	C	D	E
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
BREAKFAST																	
(1) Fresh Fruits	Bananas and Sugar	100 Bananas 5 lbs. Sugar	2 3 bunch 5 lbs.	2.32 .05 per lb.	4.00 0.63	Alk Neu	5.0 0.6	1.0	2.8 2.0	1.2	2.0	8.0	2 ..	1 ..	2 ..	..	..
(2) Cereal Milk (Pint) Sugar	Cornflakes Sugar Fresh Milk	7.5 lbs 5 lbs. Sugar 100 pints	9 12-oz. pkgs. 5 lbs. 12.5 gallons	.09 per pkg. .05 per lb. .20 per gal.	2.10 0.63 6.25	Acid Neu Alk	0.9 0.6 11.7	1.8 .... 9.4	0.9 2.0 7.0	0.5 .... 36.4	2.2 .... 14.1	4.3 .... 8.5	 3	 2	.. .. ..	 1	 1
(3) Toast and Butter	Toast and Butter	15 lbs. Bread 6 lbs. Butter	15 1-lb. loaves 6 lbs.	.017 per loaf .269 per lb.	0.64 4.04	Acid Neu	1.9 0.8	4.2	3.9 4.7	1.2 0.3	2.1 0.2	3.0 0.3	.. 2	1 2	.. ..	.. 1	.. 1
(4) Coffee Evap. Milk Sugar	Coffee, Evap. Milk Sugar	8 gallons	8 gallons	.11 per gal.	2.20	Alk	7.5	1.1	2.8	4.2	1.7	0.6	3	2	..	1	1
(5) Protein Combination	Creamed Chipped Beef French Fried Potatoes	8 1-lb. cans 30 lbs. Potatoes	8 1-lb. cans 30 lbs.	2.21 .018 per lb.	5.50 1.80	Acid Alk	1.6 3.5	6.3 1.5	2.6 2.0	10.5 1.3	6.0 2.6	9.8 8.9	3 ..	2 1	.. ..	1 ..	1 ..
DINNER																	
(1) Appetizer Cocktail Soup or Fruit Cup	Fruit Cup Grapefruit Pineapple Apple	1 No. 10 Can Each	107 ozs. each	1.76	4.40	Alk	2.5	0.2	1.8	1.0	0.8	1.5	2	2	2	..	..
(2) Protein (Meats, Etc.)	Baked Loin of Lamb Mint Sauce	50 lbs. Lamb<>.....	50 lbs. Loin<>.....	9.40<>.....	23.50<>.....	Acid	5.9<>....	28.1<>...	9.8<>....	1.7<>....	16.1<>....	19.4<>....	..<>..	1<>..	..<>..	..<>..	..<>..
(3) Vegetables a. Starchy b. Watery c. Protective	Browned Potatoes Onions Spinach, plain	35 lbs. Potatoes 30 lbs. Onions 40 lbs. Spinach	35 lbs. 30 lbs. 40 lbs.	0.81 0.53 2.80	2.25 1.53 7.00	Alk Alk Alk	4.1 3.5 4.7	2.2 1.4 2.4	4.7 1.4 0.8	1.5 3.1 8.1	3.1 2.1 4.1	6.8 2.1 60.2	.. 2 2	1 1 1	2* 2 3*	.. .. ..	.. .. ..
(4) Salad	.....	.....	.....	.....	.....		....	....	....	....	....	....	..	..	..	..	..
(5) Bread and Butter	Bread and Butter	15 lbs. Bread 6 lbs. Butter	15 1-lb. loaves 6 lbs. Butter	.017 per loaf .269 per lb.	0.64 4.04	Acid Neu	1.9 0.8	4.2	3.9 4.7	1.2 0.3	2.1 0.2	3.0 0.3	.. 2	1 2	.. ..	.. 1	.. 1
(6) Beverage	Coffee, Evap. Milk Sugar	8 gallons	8 gallons	.11 per gal.	2.20	Alk	7.5	1.1	2.8	4.2	1.7	0.6	3	2	..	1	1
(7) Dessert	Custard Pudding	ACM Formula	ACM Formula	1.20	3.00	Alk	1.6	3.9	2.6	9.4	4.5	3.8	3	2	..	1	1
SUPPER																	
(1) Protein Combination	Liver and Bacon	20 lbs. Liver	20 lbs. Liver	4.40	11.00	Acid	5.7	16.0	10.4	2.1	7.6	42.1	2	1	1	..	1
(2) Vegetables	Lyonnaise Potatoes Lima Beans	30 lbs. Potatoes 4 No. 10 cans	30 lbs. 4 Onions 4 No. 10 Cans	0.89 1.07	2.23 2.68	Alk Alk	4.1 3.1	2.1 3.0	3.2 1.9	1.7 2.3	2.9 5.4	6.1 12.1	.. *	1 *	2* ..	..	..
(3) Bread and Butter	Cinnamon Rolls Butter	1 gallon sweet dough 6 lbs. Butter	29 lbs Ingredients 6 lbs. Butter	1.40 1.61	3.50 4.03	Acid Neu	3.4 0.7	6.5 0.3	8.5 4.6	5.5 0.3	2.3 0.2	5.0 0.3	3 2	2 2	.. ..	1 1	1 1
(4) Beverage	Hot Tea Evap. Milk Sugar	7 gallons	7 gallons	0.70	1.75	Alk	6.6	1.1	2.8	4.2	1.7	0.6	3	2	..	1	1
(5) Dessert	Lemon Meringue Pie	18 9-in. pies	18 Pies	2.89	7.23	Acid	2.9	5.0	5.0	7.8	4.1	4.6	3	2	..	1	1
RECAPITULATION																	
Totals for Breakfast					27.79	Alk	34.1	25.8	30.7	55.8	30.9	43.4	3	2	2	1	1
Totals for Dinner					48.61	Neu	32.5	43.5	32.5	30.5	34.5	97.7	3	2	3*	1	1
Totals for Supper					32.42	Neu	26.5	33.9	36.4	23.9	24.2	70.8	3	2	2*	1	1
Aggregate for Day					108.82	Alk (Qtly)	93.1	103.2	99.6	110.0	89.6	211.9	3	2	3*	1	1
STANDARD REQUIREMENTS																	
Optimum Totals for Dinner				34.2%		30%	28%	33%	40%	29%	30%	3	3	1	2	1
Optimum Totals for Breakfast				40 %		43%	46%	41%	31%	40%	40%	3	2	3	1	1
Optimum Totals for Supper				25.8%		27%	26%	26%	29%	31%	30%	3	2	2	1	1
Optimum Totals for Day				100 %	Alk (Qtly)	100%	100%	100%	100%	100%	100%	3	3	3	2	1

NOTE: This blank form is designed for use in building a permanent and indexed file of accurately balanced menus. It may be used to analyze existing menus, or to develop new menus. In either case, all necessary tabular data, except market price, is to be found in the "Tables of Food Value," accompanying "Practical Nutrition," a handbook for mess Stewards. All data for nutrients are expressed as percentages of daily requirements. One food item with the corresponding data is selected from each table of the book, after which, if each and all columns of this form total 100%, the diet is in biological nutrient balance. Column 4 is computed from column 3. Column 5 is computed from column 4 and the market price of products listed. Additional copies of this form or of the book "Practical Nutrition," can be procured from the publisher, or from the author, Major Reuben Noel Perley, Army Building, Omaha, Nebraska.

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* Uncertain

Illustrated Ten-Day Basic Menu

*Signifies one of Perley's Principal Protective Foods.
†Signifies one of Perley's Principal Protective Foods as an ingredient of importance.

	BREAKFAST	DINNER	SUPPER
1ST DAY SUNDAY	Blackberries Cream of Wheat *Pint of Milk Bacon and Eggs *Buttered Toast †Coffee	Thin Soup (Chicken) Roast Stuffed Chicken †Cream Gravy Mashed Potatoes *Carrots *Peas Peach Salad and Mayonnaise *Lettuce Base Bread and Butter †Coffee †Ice Cream	Curry of Beef Fried Sweet Potatoes *Green String Beans Baking Powder Biscuits †Hot Chocolate Plum Pudding & Sauce
2ND DAY MONDAY	*Bananas Cornflakes *Pint of Milk †Cream Chipped Beef French Fried Potatoes *Buttered Toast †Coffee	*Fruit Cup Baked Loin of Lamb Mint Sauce Browned Potatoes Onions *Spinach Bread and Butter †Coffee †Custard Pudding	*Liver & Bacon *Lyonnaise Potatoes Lima Beans Cinnamon Rolls †Hot Tea †Lemon Meringue Pie
3RD DAY TUESDAY	Cantaloupe Puffed Rice *Pint of Milk *Scrambled Egg & Bacon *Buttered Whole Wheat Toast †Coffee	Puree of Potato Beef Steaks Water Gravy French Fried Potatoes Corn on the Cob Radishes Pineapple Salad 1000 Island Dressing Bread & Butter †Coffee Coffee Cake	Chicken Salad Potato Chips Baked Squash *Hot Corn Bread & Butter Lemonade Apple Cobbler & Lemon Sauce
4TH DAY WEDNESDAY	*Oranges Puffed Wheat *Pint of Milk *Three Minute Eggs Toast & Butter †Coffee	*Tomato Juice Glazed Baked Ham Candied Sweet Potatoes Boiled Parsnips *Green String Beans Pear Salad *Lettuce Base French Dressing *Bread & Butter †Coffee Jello	Macaroni & Cheese *Carrot & Pea Salad *Stewed Tomatoes *Rye Bread & Butter †Hot Chocolate †Marble Cake
5TH DAY THURSDAY	*Bananas Oatmeal *Pint of Milk Pork Sausage & Batter Cakes Syrup †Coffee	†Cream of Tomato Braised Beef Baked Potatoes Beets *Cold Slaw Peach Salad *Lettuce Base *Bread & Butter †Coffee †Sponge Cake	†Mutton Pot Pie Apple & Celery Salad *Lettuce Base †Sour Milk Biscuits †Coffee †Cocoanut Cream Pie
6TH DAY FRIDAY	Delicious Apples Corn Meal Mush *Pint of Milk Pork Sausage †French Toast & Syrup †Coffee	†Puree of Split Pea Stuffed Baked Halibut †Tomato Sauce †Creamed Potatoes *Carrots *Spinach *Canned Grapefruit Salad *Lettuce Base *Bread & Butter †Coffee Apple Pie	Salmon Salad *Lettuce Base Kidney Beans & Rice Beets *Cheese Biscuits & Butter Iced Tea & Lemons †Corn Starch Pudding
7TH DAY SATURDAY	Canteloupe Boiled Rice *Pint of Milk Ham & Eggs *Whole Wheat Toast & Butter †Coffee	†Oyster Stew Vienna Sausage Baked Beans Pickled Beets *Cold Slaw Peach Salad *Lettuce Base *Bread & Butter †Coffee †Pumpkin Pie	Cold Meats Potato Salad Asparagus Tips *Apple Rolls & Butter Ginger Ale *Custard Pudding
8TH DAY SUNDAY	*Grapefruit Bran Flakes *Pint of Milk *Scrambled Eggs & Bacon *Buttered Toast †Coffee	*Fruit Cup Pot Roast of Beef Water Gravy Mashed Potatoes Baked Hubbard Squash *Tomato Salad *Lettuce Base *Bread & Butter †Coffee †Orange Ice	Bologna Sausage Baked Idaho Potatoes *Cold Slaw Stollen & Butter Near Beer †Bread Pudding
9TH DAY MONDAY	*Canned Grapefruit Shredded Wheat *Pint of Milk *Tomato Omelet *Buttered Toast †Coffee	Apple Sauce Roast Pork Brown Gravy Browned White Potatoes Onions *Stewed Tomatoes Asparagus Salad *Lettuce Base *Bread & Butter †Coffee Doughnuts	*Liver & Bacon French Baked Potatoes *Peas *Hot Raised Rolls & Butter †Cocoa †Pumpkin Pie
10TH DAY TUESDAY	*Orange Juice Oatmeal *Pint of Milk Pork Sausage Buckwheat Cakes †Coffee	†Tomato & Rice Soup Chicken Fricasse *Cream Gravy Au Gratin Potatoes Fried Egg Plant *Green Peppers *Fruit Salad *Lettuce Base *Bread & Butter †Coffee †Quick Cake	†Irish Stew *Head Lettuce Salad Mayonnaise *Parker House Rolls & Butter †Coffee †Brown Betty

should be scheduled in ten day cycles. Milk, butter and eggs should be served daily, limited only by the appetite (or pocketbook) in quantity. No ration savings should be effected on these items. It is to be hoped that some time the ration allowance of milk and eggs will be substantially increased. Milk is the principal source of calcium. Men who will not drink milk at meal times often will drink it in the forenoon or before retiring.

Liver should be served perhaps twice in ten days. Of the protective fruits and vegetables listed, a selection of not less than two, in rotation, should be in each day's diet. Scheduling protective foods over ten day periods will aid in insuring variety and will permit of purchasing standard quantities of many items at the beginning of the month.

Referring to the sample menu accompanying this article, observe that generally a food is selected for each caption in the menu form. This practice makes it permissible to ignore all nutrients for which data is not given in the form. Menus can be balanced without this form, but not readily. The reader should study the menus herewith with some attention. Many lessons in nutrition are to be learned by observing the peculiarities of the several foods as emphasized by the figures.

Each mess officer should prepare for his mess sergeant a *basic menu* covering ten days or any multiple thereof. The purpose of this menu is to schedule those foods the consumption of which he deems it desirable to control. This practice insures health protection as well as variety and economy.

These basic menus shown here are illustrative only. Purposely the writer has selected combinations not effecting perfect nutrient balance so that the reader may see which foods are responsible for the excess or shortage of the several nutrients. The ration allowance was 40 cents when the prices given actually obtained in the market of Omaha two years ago, and the menus required 46.4 cents per ration at that time. The excess cost is principally in the items of milk and eggs.

Nutrient and cost data of the menus are taken from the writer's own food tables, which present all data as percentages of the average soldier's daily requirements. The nutrient standards upon which the data are based have been approved by national authorities in nutrition and may be accepted as reasonable.

Good menus should be permanently filed. The author has several thousand such menus in an index file and recommends this system for its simplicity in locating menus featuring such particular foods as may be desired.

Provided one pint of milk and two eggs are served per soldier per day, one half of all money spent for food is expended for the following fifteen items. They are entitled to the mess officers' preferred attention accordingly in the order given. They may be purchased or ordered at one time at the beginning of the month and charged off against the ration allowance in one operation. The consumption of all may be standardized by a basic menu:

1. Milk, fresh
2. Butter
3. Eggs, table
4. Eggs, cooking
5. Potatoes
6. Sugar
7. Coffee
8. Bread
9. Milk, evap.
10. Lard, or substitute
11. Bacon
12. Flour
13. Catsup
14. Onions
15. Tomatoes

(Condiments total 5%)

The remainder of foodstuffs may be classified as meats, fresh vegetables, and fresh fruits. These three groups are "specials" for each day. By determining a standard average money allowance for each group per day, (less items in preceding paragraph) the problem of keeping within the ration allowance is greatly simplified. The second half of the ration allowance pays for these three groups.

Men live on their stomachs whether in the woods or in garrison. Officers conducting messes for the C.C.C. in the woods have a special problem not unlike that of troops in the field. Cooking facilities are limited. There is a shortage of dishes and kitchen implements. This is excuse for serving more stews and other composite foods. However the ingenuity of mess officers is overcoming many of the camp handicaps and the better camps are not unlike garrison as far as the menus are concerned. It is not essential that the entire dinner be heaped upon the mess pan at one time. Meals are readily divisible into integral parts such that the men can visit the kitchen two or more times with the same mess pan. As a rule vegetables should be served free of liquid in camp, except in a stew.

In the C.C.C. camps with which the writer is familiar the problem of supply ranges all the way from proximity to slaughter houses and modern food stores to remote situations dependent upon infrequent visits of supply trains (i.e. Ford mail truck nearly worn out). The average mess officer desires to purchase meats, fruits, vegetables, milk, eggs and butter locally with authority to claim increase in ration allowance on items of which the local price is higher. The advantage is a more dependable supply of perishables.

Food preservation is a serious problem but here again ingenuity has prevailed. Vegetable cellars, cold cellars, improvised ice boxes, and regular ice boxes are found in many camps. Ice supply is impossible in many locations, hence forcing resort to side hill cellars. Even these are denied to those on flat barren wastes.

It is suggested that the reader build up his own basic menu patterned after the one shown here, but adapted to the supply available to him and conforming to the dietary principles outlined herein.

[EDITOR'S NOTE: *The author, a graduate of the Q.M.C. Subsistence School and an experienced mess officer, is a recognized authority on the economics and nutrition of foodstuffs. His texts on practical nutrition have the indorsement of recognized national authorities including the Surgeon General of the Army.*]

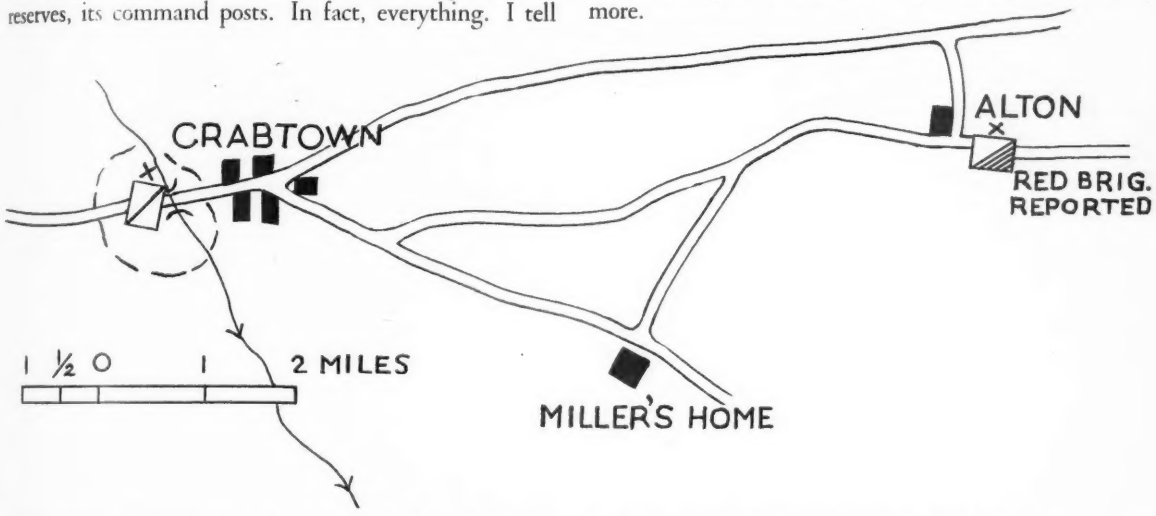
NOTES FROM THE CHIEF OF CAVALRY

What Would You Do In a Situation Like This?

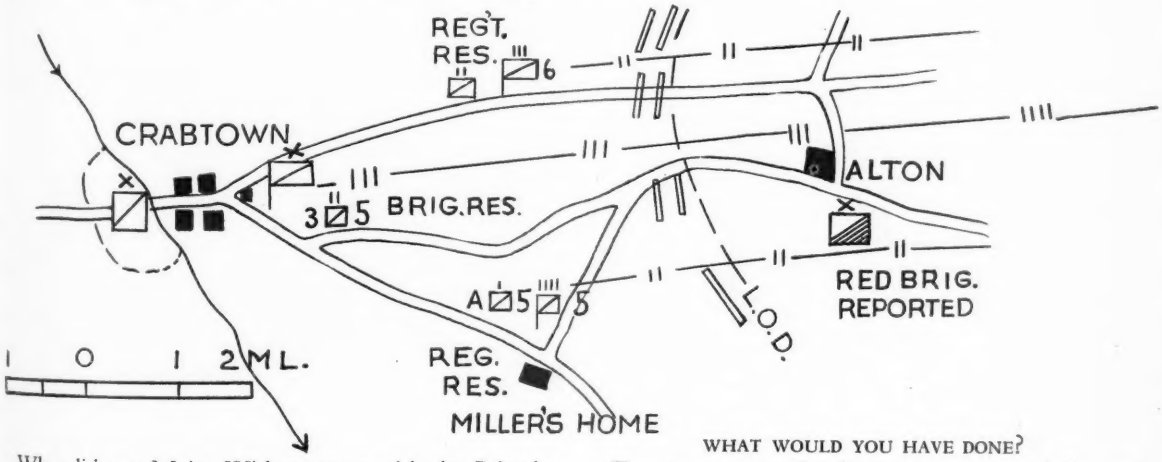
AS the clock struck two on a beautiful starlit morning, a grey-haired officer arose from a camp desk in a Brigade Headquarters tent and said to himself with a satisfied air:

"Thrushy, old man, this is a wonderful order. Each regiment has a sector, each regiment has its own zone of action, each unit its boundaries, its line of departure, its reserves, its command posts. In fact, everything. I tell you, Thrushy, neither old Mr. Cavalry School himself nor Mr. Leavenworth can beat this one. It has all the lessons of the World War—nothing missed. Thrushy, I congratulate you."

About 4:00 p. m. the preceding day the Blue Brigade had gone into bivouac near Crabtown. Shortly thereafter the "Old Man" had received a meager report that a hostile brigade was entrenching near Alton—nothing more.



Turning to Colonel Thrusher Foote, his Brigade Executive, the "Old Man" directed: "We will attack them tomorrow morning. Get out the orders," and then he hied himself to his tent. Colonel Foote and his S-3, Major H. I. Withers, slaved, argued, planned, and reargued all during the evening, and as the night wore on, Withers had finally remarked: "Well, Colonel, although I don't agree with you about this plan of action, you are the boss, and your decision must govern, so I'll shut up." The order was then completed, and as the heavy-eyed colonel finished congratulating himself and was preparing to catch a little rest, Major Withers dispatched the order and the accompanying sketch to subordinate commanders.



Why did not Major Withers agree with the Brigade Executive in his plan of action? Do you agree with it?

WHAT WOULD YOU HAVE DONE?

(For an account of subsequent events and for conclusions, turn the page.)

SUBSEQUENT EVENTS AND CONCLUSIONS

Three days later two unshaven, unkempt, and bedraggled people sat apart from several others, looking through a barbed wire fence while they talked. On the other side of the fence walked a Red sentinel, who constantly remained within ear shot and watched them continually.

Close scrutiny would have shown them to be Major Withers and his erstwhile chief, Colonel Thrusher Foote. "Rave on, Withers," said the latter. "It's easy to say, 'I told you so.' That was a good order. How was I to know there wasn't any enemy on the north regimental sector? How was I to know that the Reds were all to the south and would gang up on us with their whole brigade, defeat our regiments in detail, and even capture the command post and us?"

"My dear Colonel, chew this over and don't forget it if you ever see Blueland again. School examples and war models should both be applied with common sense. There are different kinds of wars, and this is different from your World War. That was stabilization; this one is movement. Further, our part is cavalry. We have mobility—and fire power—but without mental mobility and the application of common sense, our animal or mechanical mobility and fire power are lost to a cavalryman. Your order proves it. True, your armored cars were elsewhere, but still you had plenty of horse patrols—you didn't have to make a shot in the dark. Does a cat start his spring before he knows where his bird is and he is close enough to leap upon it? No! But you did in your wonderful order. All you had to do, Colonel, was to march next morning, covered by reconnaissance patrols, then jump on your enemy when you found him, with everything you had, in the simplest, quickest manner the situation would permit, governed by a brief oral order for the attack based upon definite information."—*Department of Tactics, The Cavalry School.*

Address of Major General Guy V. Henry, Chief of Cavalry

(Made before the National Guard Officers' Association, of the State of New York, Utica, New York, January 19, 1934.)

GENTLEMEN: With the restricted time at my disposal it would be impossible for me to go very deeply into the present much discussed and much misunderstood subject of Cavalry.

In America we have properly described our Cavalry, since the Civil War, as that arm principally mounted on horses, capable of independent action and able to close with the enemy in close combat. Its essential characteristics have been great mobility, fire-power and shock. We have stressed mobility and fire-power; whereas, prior to the World War, European Cavalry stressed mobility and the shock of the mounted charge. Because of our heavy fire-power and efficiency in dismounted combat, Europeans frequently referred to American Cavalry as mounted Infantry.

European Cavalry performed a most important role on all fronts in the World War, in spite of its inefficiency in fire-power and dismounted action. I say with conviction, however, that, if either the Allies or Central powers had started that war with a Cavalry armed and trained as was our American Cavalry, the campaigns of that war would have been materially changed, as would possibly the final result of the war itself.

Cavalry with Infantry are the only two ground arms of the service capable of independent action and possessing the essentials of victory; i. e., capable of closing with the enemy in hand-to-hand combat. Their essential difference is one of mobility.

Because of this difference of mobility, the missions assigned Cavalry are: reconnaissance and counter-reconnaissance, seizing advanced positions, protection of the front, flanks and rear of the Infantry, pursuit, covering retreats, and acting as mobile reserve.

In modern war is an arm capable of performing these missions needed? Most assuredly, yes! Every war brings tactical changes. The World War brought the great extension in depth in the attack and defense caused by the long range and efficiency of artillery and the machine gun.

The next war for most conceivable theatres of operation will be a war of maneuver—not trench warfare with protected flanks. Maneuver requires mobility, and with the rapidly increasing system of good roads, improved motor vehicles, airplanes, and radio, we will have much more mobility than heretofore; this will force the tactical changes of a far greater extension of the security elements of the main forces to front, flanks and rear, a greater demand for forces to strike these weak spots of the enemy and a greater need for mobile reserves.

While the mobility of whole armies will be greater than before, such masses must move relatively slowly, and have smaller forces of higher mobility ready to make the quick thrusts or to cover the movement of the masses. Due to these increased demands, such forces must be numerous, must be capable of independent action, and also able to close with the enemy in hand-to-hand combat—in other words, be troops capable of performing the missions of Cavalry.

What will be the armament, mode of transportation and character of personnel for such troops? To explain, I must digress a little.

Since the World War there has been great improvement in roads, motor transport and armored fighting vehicles, i. e., tanks and armored cars. These armored vehicles possess mobility, fire-power and shock, or, in other words, they are able to close with the enemy in combat. Further, if formed into correct types of organizations, they possess a considerable degree of independence of action. Therefore, they possess the general characteristics of Cavalry; but, mind you, I say when grouped in correct types of organizations, they possess a considerable degree of independence of action. If such organizations

can perform the missions of Cavalry, the first common sense thing to do is to man them by men tactically trained for these missions—such specialists are Cavalrymen.

Am I talking heresy to the old horse soldier? No! What we Cavalrymen want is the most efficient Cavalry. Let no soldier be carried away by the crank. Let him clearly analyze the situation and reach a logical conclusion. If this is done you will find that our probable theatres of operation or probable opponents are less localized than those of any other first class power, Great Britain alone excepted. This demands a Cavalry capable of operating in all terrain. We cannot plan for one or two small theatres of operation.

Armored fighting vehicles are incapable of operating over all types of terrain. There are many square miles in any theatre of operations where they cannot deploy for attack or close with the enemy, and their usefulness in minor warfare is limited. They have, however, great road mobility and on suitable terrain, high cross country mobility, fire-power and shock. Whenever usable, they are a weapon of tremendous power and most essential to the Cavalry of a modern army.

Horse Cavalry, on the contrary, has less road mobility but can successfully operate over practically all types of terrain. In a war of movement its horses will rapidly transport over average terrain its fire-power to within dismounted combat range of the enemy. It is most efficient in minor warfare, and it stands preëminent for detailed and close-in reconnaissance. It is the equal of Infantry, man for man, for dismounted attack or defense, and this is most useful as a mobile reserve. Some will ask, can horse Cavalry do these under modern conditions? In a war of movement, decidedly, yes! In such, due to the horse's mobility, Cavalry presents only fleeting targets to enemy Artillery, its anti-tank weapons give it the same protection against armored vehicles as have other troops, and, because of the accidents of terrain, small arms fire is seldom effective at over three-fourths of a mile. This gives horse Cavalry great battlefield mobility and permits it, by maneuver and fire-power, to suddenly strike, withdraw and strike again.

In that last phrase: "withdraw and strike again" lies the great power of horse Cavalry. No other troops can send large or small units into combat against superior forces, break off the action at will when further progress is impossible, and possess the sure cross-country mobility to go into action at another point.

From the foregoing you can see that both mechanization and horse have their powers and limitations, and neither without the other will give us our maximum efficiency. Both in proper proportions are needed and both must be used in coöperation and coördination with each other.

This combination is the general scheme of all first-class powers for their Cavalry of the future, the proportions of mechanization and horse varying with their national pocketbooks and probable theatres of operation.

You have read much in the daily press regarding the mechanization or motorization of American Cavalry! What are we really doing? If funds become available, the War Department's program is to mechanize two of the thirteen active regiments of the Regular Army. At present one is partly so equipped. Further, to supply equipment for one troop of armored cars of the three-troop squadron now a part of each of the three Cavalry divisions of the Regular Army, and four of the National Guard. Also, to supply each horse regiment of the Regular Army with six armored cars, called "Scout Cars," for reconnaissance purposes. Certainly, this is a most modest mechanization program when you consider we have thirty-four regiments of Cavalry in the Regular Army and National Guard together. For motorization we are replacing the mule-drawn wagon in the trains of horse regiments by the 4-wheel drive light truck; this in order to increase the mobility of these regiments. To further increase the efficiency of the horse regiments, we have replaced the machine rifle by the light machine gun and will add a troop of twelve .50 caliber machine guns for anti-tank purposes. Our new regiment will consist roughly of six armored cars, eighty-four .30 caliber machine guns and twelve .50 caliber machine guns on pack horses and 500 rifles in the hands of troopers—a strong, mobile fighting force.

Our mechanized regiment is self-contained and consists of its reconnaissance group of fifteen armored cars, its attack group of twenty fast tanks, called "Combat Cars," and its holding group of two troops of machine gunners and riflemen transported in combination wheel and caterpillar vehicles—also no inconsiderable fighting force.

I hope that I have showed you the great need for Cavalry in the future and also convinced you that Cavalry, for maximum efficiency, must be a combination of mechanization and horse—in what proportions only the experiment now going on in the Regular Army can tell. Pending the result of that experiment, I hope and pray that in the interest of the National Defense the horse Cavalry of the National Guard will not be decreased, and that every effort will be made by those in authority to increase its efficiency:

First, by seeing that it is properly supplied with horses;

Second, that the regiments are brought up to date by:

a. Increasing their fire-power by the substitution of the light machine gun for the machine rifle. This is now in process of fulfillment.

b. The incorporation of the six Scout Cars for reconnaissance and anti-mechanization protection.

c. The addition of .50 caliber anti-armored vehicle machine gun organizations.

d. The supply of modern radio equipment.

Third, the completion of all Brigade Headquarters Troops.

Fourth, the organization of a Signal Troop and Arm-

ored Car Troop for each of the four divisions, and then the organization of such other divisional units as its authorized strength will allow.

In carrying out the foregoing not one cent would be wasted for any future mechanization which may come, and it will assure until then a force reasonably well prepared to perform the increased demands that will surely be made on Cavalry in modern war.

In closing let me warn you not to accept troops transported in ordinary motor vehicles as a substitute for Cavalry, either mechanized or horsed. Cavalry must have mobility after contact with the enemy. Troops such as referred to have then no greater mobility than the foot soldier after contact with the enemy, and, therefore, because of lack of greater maneuver mobility, are a poor substitute for Cavalry—either mechanized or horsed.

CURRENT TOPICS

Minutes of the Annual Meeting of the Cavalry Association

Washington, D. C., January 30, 1934.

The meeting was held at the Army and Navy Club, Washington, D. C., January 29, 1934, being called to order at 8:20 p. m. by the President. Thirty-eight members were present in person, and three hundred and twenty-six were represented by proxy.

Upon motion it was voted to dispense with the reading of the minutes of the last meeting.

The annual report of the Secretary-Treasurer-Editor was read as follows:

FINANCIAL STATEMENT OF THE UNITED STATES CAVALRY ASSOCIATION

For the Year Ending December 31, 1933

CASH STATEMENT

ACCOUNT	Receipts	Expenditures
Balance, January 1, 1933	$ 1,534.16	
Book Department	5,959.39	$ 5,694.17
Dues and Cavalry Journal	4,217.84	3,766.50
Interest on Securities	420.00	30.00
Saddle Department	206.88	196.45
Salaries		757.50
Postage, Stationery and Incidentals	14.78	435.88
Rent	390.00	900.00
Telephone	83.93	178.44
Telegraph		5.04
Trophies		204.43
Insurance		17.00
Balance, December 1, 1933		641.57
TOTAL	$12,826.98	$12,826.98

ASSETS (Exclusive of Securities)

Cash in Bank, December 31, 1933	$ 641.57
Stock on Hand, Books	352.25
Office Equipment and Supplies	200.00
Accounts Receivable:	
Book Department	850.97
Dues and Cavalry Journal	2,461.50
Small Cash	4.55
TOTAL	$4,510.84

LIABILITIES

Due Customers for Overpayment, etc.	$ 28.66
Bills Payable:	
E. M. Bryan Co., stationery	2.05
Book Department, The Cavalry School	1.00
B. Westermann Co.	1.78
Franklin Square Agency	122.34
National Service Publishing Co.	5.29
Telephone	6.32
Net Value (exclusive of securities), Dec. 31, 1933	4,343.40
TOTAL	$4,510.84

Net Value (exclusive of securities), Dec. 31, 1933	$4,343.40
Do., Dec. 31, 1932	4,226.34
Increase in Value during 1933	$ 117.06
Market Value of Securities	$5,910.00
Net Value (exclusive of securities)	4,343.40
TOTAL VALUE	$10,253.40

Washington, D. C., January 27, 1934.

We, the undersigned, appointed by the President of the United States Cavalry Association, to audit the accounts of the Treasurer of said Association, for the year ending December 31, 1933, do hereby certify that we have examined the books of account, vouchers, and the foregoing statement, covering said fiscal year, and that the same are correct and true to the best of our knowledge and belief.

L. W. OLIVER,
Colonel, Cavalry.
J. F. DAVIS,
Major, Cavalry.
L. L. GOCKER,
Captain, 3rd Cavalry.

SECURITIES

The total market value is $5,910.00, and the dividends paid in 1933 amounted to $390.00 (details omitted here).

NET PROFIT FROM 1933 BUSINESS

It will be noted that the bank balance on December 31, 1933, was $892.59 less than that on January 1, 1933. However there should be taken into consideration also,

(Concluded on page 80)

PROFESSIONAL NOTES AND DISCUSSION

Professional Article Praised

875 Marion St.,
Denver, Colo.,
Nov. 7, 1933.

DEAR RUSSELL:

I think you've asked me once or twice what particular article in an issue of the CAVALRY JOURNAL I thought was the best.

In the last issue it certainly is Commiskey's on pages 9-10—"Cavalry Crossing of an Unfordable River in the Philippines". It is *constructive* and deals with an item of training too much neglected.

The picture on page 9 reminds me forcibly of a problem I had to help solve one July day in 1879. Lieutenant Farrow and I with seven soldiers, twenty Indian scouts and a large pack train were en route from Pendleton, Oregon, to Middle Idaho, to take part in the Sheepeater Indian Campaign.

We came to the Snake River, just south of Lat. 45°, and that river is wide and swift; to cross it all we had was simply an old scow propelled by sweeps. This, however, took our pack train *cargoes,* saddles, etc., across, and our Indians—with one mounted Indian in the lead—drove our whole herd of eighty or ninety animals into the river and swam them across without the loss of a hide or hoof—and with a delay of an hour or so. In Scott's *Memoirs,* page 114, he relates a similar experience.

I had some training with my squadron of the 3rd Cavalry in 1907 similar to Commiskey's, though on a smaller scale and wrote it up for the CAVALRY JOURNAL, where you will find it in the October, 1907, issue, pages 241-7.

When I say that such training is too often neglected, I think I am right. About 1900 Colonel — of the — Infantry, U.S.V., had a trip to make from San Isidro to Cabanatuan by casco, on top of which the colonel put his soldier escort, with belts of ammunition *well secured* about the waist. At a bend in the river, the casco turned over on its side; the men jumped into the water, went down, and *never came up!* . . .

Very sincerely yours,

W. C. BROWN.*

*Brigadier General, U. S. Army, retired.

Historical Note

One of our oldest subscribers, who is interested in the history of our past Indian campaigns, sends us an account, published September 30, 1930, in the *Sunshine Magazine* of Sioux Falls, South Dakota, of the experiences of Sergeant Charles A. Windolph. Troop "H", 7th Cavalry (Benteen's Troop), in the Battle of the Little Big Horn.

Windolph, one of the few survivors, was one of those awarded Medals of Honor for fighting their way to the river and bringing water to the wounded in Reno's beleaguered entrenchments, June 26, 1876.

His story throws so interesting a sidelight on the much discussed division of the regiment just previous to Custer's attack on June 25th that we make the following quotation:

"I was riding a horse called *Roman Nose,* and a man named McCurry came to me and wanted to trade his horse *Tip* for mine. *Tip* was a little hard to handle, and McCurry did not like him. I was a good horseman in those days and figured I could ride anything, so I told him it would be all right, if agreeable to Captain Benteen. So, I went to look him up and found him in company with General Custer and the rest of the officers, holding a conference. I approached as near as seemed respectful and was waiting to get his attention and heard some of the conversation. Charley Reynolds, the famous scout, was with them, and I heard him say to the General something about 'the biggest bunch of Indians he had ever seen'. They all seemed to be talking very earnestly, and finally Captain Benteen said, 'Hadn't we better keep the regiment together? If that is a big camp, we will need every man we have'. Custer's only answer was: 'You have your orders. Sound to horse'."

New Facts Simplify Bot Control

(Extracts from U. S. Department of Agriculture press bulletin, December 5, 1933).

The control of bots in horses is now much more effective as a result of recent experiments of the Bureau of Animal Industry and the Bureau of Entomology of the U. S. Department of Agriculture.

The larvæ of the common bot hatched from hairs of the animal penetrate the surface of the tongue and mucous membranes of the mouth and stay there from twenty to twenty-eight days before migrating to the stomach . . . Freezing weather kills the adult flies, but the immature bots in the tongue or on the way from the tongue to the stomach escape the freeze on the outside and the chemical treatment on the inside, if the dose is given too early.

It all sums up now to this: after the first freezing weather lasting a day or more, destroy all bot eggs on

(Concluded on page 80)

NATIONAL GUARD NOTES

Making Code Practice Successful

By Lieutenant George W. Fried, 205th Infantry, Minnesota National Guard

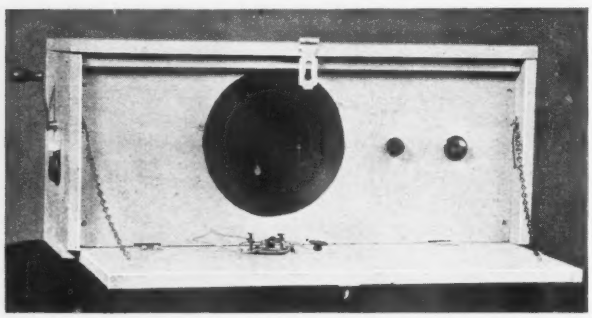
COMMANDING officers of communications units in the National Guard quite commonly have one bugbear in their training schedules under the caption "Code Practice". The results obtained from the time spent in this instruction are frequently so unsatisfactory as to be negligible. The chief difficulty, perhaps, lies in the fact that students are on hand for instruction but once each week, and that they have six days to forget what they learned in one-half hour. There was a day when nearly every little hamlet could produce one or two boys who were "ham" operators. The novelty of the radio and the old home-built set is past, and now cities of several thousand people could produce but few of these amateurs.

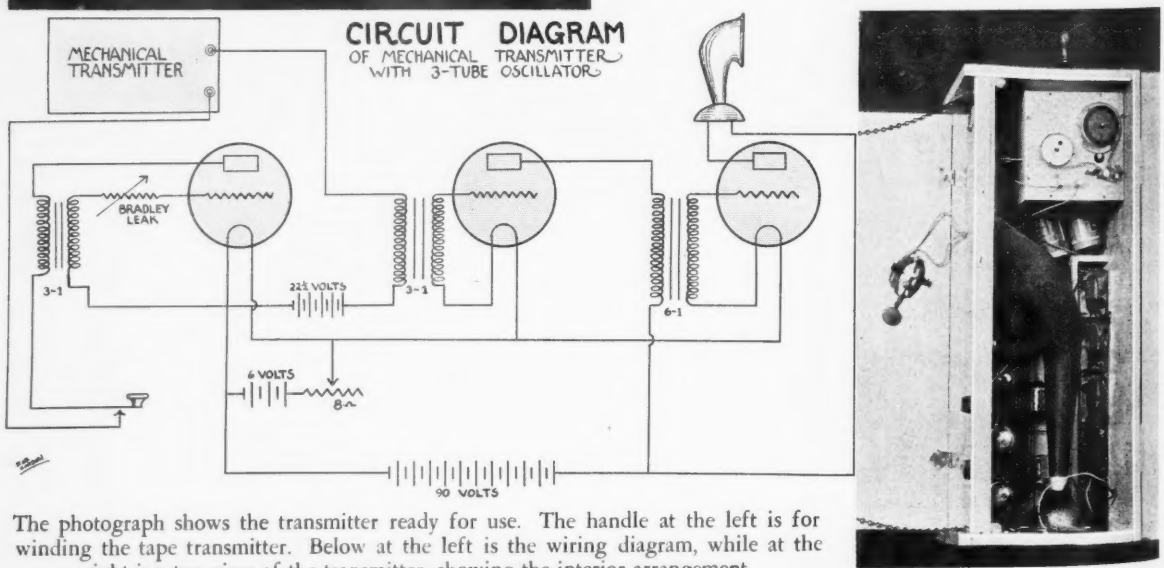
Sooner or later every communications unit will be faced with the necessity of training radio personnel which has absolutely no knowledge of the code. When that time comes something will have to be done to stimulate the interest of the student to such an extent that he will enjoy code practice.

In order to create this interest the writer has evolved a simple piece of apparatus, which has done much to increase interest in code practice. It has put this instruction on a competitive basis, and students now vie with each other for the most perfect paper in tests.

A second-hand, mechanical code transmitter was secured. It happened to be a Teleplex. There are two commonly known makes on the market—the Teleplex and the Omnigraph—both of which are very satisfactory for this purpose. The one we bought was an old hand-operated model and we attached it to a spring phonograph motor to do away with the necessity of manual operation. A three-tube oscillator was connected to the Teleplex and an old-fashioned horn model loudspeaker was connected to the output of the oscillator. By using 90 volts of plate current sufficient volume was produced to make the note, or signal, from the oscillator clearly and distinctly audible in any part of the drill hall. The accompanying circuit diagram shows how to construct the oscillator. The tone of the note is varied to the desired pitch by the adjustment of the Bradley leak.

After having completed the oscillator, three practice tapes were purchased from the manufacturer, one a be-





The photograph shows the transmitter ready for use. The handle at the left is for winding the tape transmitter. Below at the left is the wiring diagram, while at the right is a top view of the transmitter, showing the interior arrangement.

ginners' tape containing the alphabet and numerals, and one each of five-letter groups in cipher and four-letter groups in code. The tapes were ordered made for speeds of from five to twelve words a minute.

Best results are obtained by having the alphabet placed on the tape out of its regular sequence. The instructor should first take up certain letters and then have the students pick out three letters from the tape transmission. As the students become proficient in receiving the letters the tape can be started at varying points. When the students have practically mastered the aphabet they should be put to work on the code groups. The fastest receivers should then be segregated from the rest of the class. When teaching code the transmission should always be just a little faster than the student can receive until such time as he can pass the test for a certain speed, when it is again increased.

When a student discovers that he is able to receive his first message interest in code study has been established, and the man will improve with very little further attention. The spirit of competition will make its appearance and the instructor's worries will be over.

The practice set described above has certain definite advantages over the commercial key and buzzer type and the service buzzer:

a. It produces perfect copy for the student. At the same time it does not sacrifice hand operation.

b. There is no variation in the speed of the transmission when once timed to a certain number of words per minute.

c. With it one instructor can teach as many as 50 students at one time, and at the same time can pass among the students and observe their progress. Being relieved of the necesity of hand-operation he could conduct classes in code throughout the day without undue fatigue.

d. It has ample volume for the largest classrooms. Students can be placed far enough apart to keep them from copying each other's work.

e. There is no necessity for an elaborate table hook-up of earphones for each student. The set is contained in one small case slightly larger but much lighter than the average table-model radio. It can be transported from room to room by one man, or even taken in the field.

The cost of constructing the set is so slight as to be within the reach of any communications unit. The mechanical transmitter is the most costly single item, but it is often possible to purchase a second-hand machine by consulting a "ham" exchange list. Their cost, new, is not prohibitive, ranging in price from $25.00 to $32.00. All other materials required should not cost in excess of $10.00.

A list of parts necessary to construct the oscillator are:

3—201A tubes.
2—Iron core transformers, ratio 3-1.
1—Iron core transformer, ratio 6-1.
1—Bradley variable grid leak.
1—Telegraph key.
1—8 ohm rheostat.
1—Magnetic type loudspeaker.
3—Commercial 1½ volt dry cells.
3—Tube sockets.
Bus wire and screws.

The 22½ volt Signal Corps issue batteries are satisfactory for "B" and "C" battery use.

News of National Guard Bureau

COLONEL H. LaT. CAVENAUGH (Cavalry), in charge of the Personnel Division of the National Guard Bureau, has been ordered to duty as Professor of Military Science and Tactics at the University of California, Berkeley, California.

Colonel Cavenaugh was stationed at Berkeley from 1926 to 1930 as instructor to the Headquarters, 40th Division, California National Guard. He sailed on the U. S. A. T. *Republic* on January 18th to take up his new duties.

The Art of Instruction

AN excellent guide for officers and noncommissioned officers in their task of instructing will be found in the following outline of a lecture by Major John J. Higgins, 104th Infantry, at the Noncommissioned Officers' School, Springfield, Mass. It comes to the INFANTRY JOURNAL through the courtesy of Captain Warner B. Sturtevant, 104th Infantry, Massachusetts National Guard:

Every instructor feels that he hasn't been allowed enough time; that he could do better if given more time.

The amount of time allowed is usually beyond his control.

The Military commander and the instructor both go through a mental process known as an ESTIMATE OF THE SITUATION; they determine what their MISSION is; they weigh the favorable and unfavorable factors and they arrive at a DECISION as to how best to accomplish their MISSION with the time and facilities availble.

The instructor must first judge his class as to experience, ability to understand, and capacity to absorb new matter; he must bring his instruction down to the level of the beginners in the class; he must bear in mind that what is commonplace to a practiced, experienced person may be new and strange and difficult to a beginner, or recruit; he must be possessed of PATIENCE and SYMPATHY.

In making his ESTIMATE OF THE SITUATION, he may go through a reasoning process similar to the following:

1. MISSION;
2. OUR PARTICULAR PROBLEM;
3. WAYS OPEN TO ME;
4. DECISION (including General Plan and Specific Plan, for each phase.)

He will consider the following under

1. MISSION:

The schedule says we must devote one hour to instruction in "Musketry"; the captain has assigned me

as instructor; MY MISSION is NOT merely to gather material on Musketry; NOT merely to talk for one hour on Musketry; but

MY MISSION IS to improve the present standing of the company in Musketry by thoroughly posting myself in all phases of the subject, by adapting the subject to the time allowed, and by delivering it in such a manner to the students that I will . . . MAKE IT STICK.

He will consider the following under

2. OUR PARTICULAR PROBLEM:

The present state of efficiency of the company in the particular subject; the history of our training; the number of beginners; the number of assistant instructors available; the mental quality of the students, their education and training; what materials and equipment are available for instructional use; is the subject attractive or unattractive; how much time is required; how many periods, and what length periods; where is the best place to present the subject, outdoors or indoors, and other things.

He will consider the following under

3. WAYS OPEN TO ME:

I will deliver the entire subjects as rapidly as I can in the hope that the students will get a general knowledge of the entire subject; or

I will strip the subject and carefully choose as many outstanding points as can be thoroughly absorbed in the time available, to be sure that the students are firmly grounded in at least a few essentials of the subject.

(*I must bear in mind* that I must not only *unload,* but I must make the information STICK; I must choose the best points; I have but one chance, one hour; "A monkey (Aesop speaking) tried to take a handful of nuts from a small-necked jar, but he grabbed too large a handful and couldn't get his hand out, nor did he until he dropped some of the nuts;" —if you only have one chance, or one hour, or one grab—DON'T try to take too many *points;* look them over, note the best, and when you get your chance, or hour, or grab—make the most of it.)

He will then make his

4. DECISION:

"I can best accomplish my MISSION under the conditions confronting me: Selecting a few points that I can make STICK;

or by covering the whole subject rapidly."

Having made his DECISION he will make a "General Plan" and a "Special Plan".

Under "General Plan" he will plan for the settings; how to lay the stage; consider what materials he will use as charts, assistants, etc.; how to divide up his subject; how to capture and hold attention.

Under "Special Plan" he will arrange for each phase of instruction, or period of progress.

Having completed his ESTIMATE OF THE SITUATION, the instructor will reach the stages of

PREPARATION AND PRESENTATION

He will learn that the steps to be taken are

1. PREPARATION
2. EXPLANATION
3. DEMONSTRATION
4. APPLICATION
5. EXAMINATION
6. DISCUSSION

He will realize that upon the work and time he puts into the first step (Preparation) depends his success in the other steps; he will understand that all or part of the other five steps must be covered fully or partially within the time that the students are at his disposal.

In PREPARATION he will gather the material; he will consult all publications and all more experienced men;

He will arrange the steps of his subject in logical sequence; he will divide it for delivery in progressive steps, or periods, if time is allowed; he will sift, cut, carve the subject to get the meat; he will choose the points which can be made TO STICK in the time available, he will choose the best points (bearing in mind the monkey and the jar), he will realize that a great deal can be driven home if delivered in a short, understandable way; he will remember the great amount of "meat" in the short poem on "Patrolling"—how it goes—

"And even though it costs delay,
Be sure to have a get-away," . . .

and

"With stealthy glance to left and right,
You hide or run, but seldom fight . . ."

He will seek to pack the most "meat" into the time allowed;

He will lay the stage, arrange the setting; he will appeal to the students through their ears and their eyes, by charts and graphs and illustrations—he will "picturize"; . . . he is now going far toward accomplishing his MISSION . . . to make his instruction STICK.

He has been planning for the PRESENTATION:

He will feel that he has done everything possible in the way of PREPARATION; that he is a master of the particular subject; that he is head and shoulders above the others in the company on the subject . . . and therein lies the danger, that he will not consider the need for him to get down to the level of the students; HE may fully understand his subject, but he doesn't accomplish his MISSION unless he makes the students understand it; he must make it STICK . . . this he does only with SYMPATHY and PATIENCE . . . he must talk on their level; he must use simple language and illustrations, as "Take this to the guy who rides the white horse . . . and make it snappy"; he will remember the Chinese proverb: "One picture is worth a million words."

He will present the subject with the proper spirit.

THE INSTRUCTOR . . . WHO WILL bear in mind the outstanding principle of military instruction that *unless the fundamentals are taught properly and thoroughly at the beginning the recruit never becomes the right kind of a soldier* . . .

and . . . WHO WILL correct the *wrong way* by DEMONSTRATING the *Right Way* . . .

is certain to accomplish . . . . .

HIS MISSION.

* * *

The National Guard Association Annual Convention

REPRESENTATIVES of the National Guard from all parts of the United States met recently in Chicago for the 1933 convention of the National Guard Association to discuss the current problems of the Guard. The delegates were welcomed by the Honorable T. F. Donovan, Lieutenant Governor of Illinois, and the Honorable E. J. Kelly, Mayor of Chicago.

In their addresses of welcome Governor Donovan and Mayor Kelly emphasized their confidence in the National Guard as an agency of the executive power. "Every man

and woman who saw the 33d Division pass in review at the Exposition, went home feeling that their lives and property were more secure because of the National Guard," said Governor Donovan.

Apart from the gratifying tributes paid to the progress of the National Guard by the Honorable Ross Collins, the essence of his address may be found in these words:

"We have been making progress at a snail-like pace. . . Must we be abused for demanding the discontinuance of useless weapons and meaningless methods? Is it not the sane and safe policy to insist that we profit by our war experience?

"The same drill, the same system of marksmanship and musketry based on the rifle, the same divisional organization of the infantry troops, and the same insistence on mere numbers are still with us. . . .

"We have ignored the fact that we are the greatest scientific and industrial nation in the world. We are not planning for the use of armored fighting vehicles. . . . We have not, and are not now, making use of our scientific and industrial preëminence in equipping our Army."

Major General Parker's address emphasized the basic elements of a sound national defense. These, he said, were three:

1. The "One Army" composed of the Regular Establishment, the National Guard and the Reserves.
2. The patriotic and fraternal organizations.
3. Intelligent community support.

In the "One Army" the Regular component does not and must not exercise political influence. Its function is primarily to instruct the citizen soldiery in peace and to prepare plans for its use in war. The civilian components, active citizens, must interpret a sound national defense policy to their communities. To do this effectively General Parker recommended the formation of local defense councils composed of representatives of the National Guard, Reserve officers, the Naval Militia or Reserve, Marine Corps Reserve, American Legion, Veterans of Foreign Wars, United Spanish War Veterans, the G. A. R., and similar patriotic societies.

General Parker outlined a plan for close and constant collaboration between citizen soldiers and veterans, for keeping exact data on the needs of national defense and for its distribution.

The Chief of the National Guard Bureau gave a full account of the activities of his Bureau during the past year, emphasizing the building program, camp construction program and the motorization of the National Guard Field Artillery. A detailed and up-to-date description of the activities of the National Guard Bureau may be found in the Chief's Annual Report recently published.

Resolutions adopted included the following:

No. 1. Expressing appreciation of the courtesies of the hosts.

No. 2. Requesting the Secretary of War to authorize a minimum of 48 armory drills and 15 days' field training for 1935.

No. 3. Indorsing the measures taken by the National Guard Bureau toward the forming of a bibliography and directory of source materials in each state relating to the history of the National Guard.

No. 4. Indorsing the project for an armory for the District of Columbia National Guard.

No. 7. Advocating a change in the method of appointing candidates from the National Guard to the U. S. Military Academy.

No. 8. Requesting that campaign streamers be awarded for service in the Spanish War to units not reaching the theatre of operations.

No. 9. To correct inequalities in the awarding of decorations for exploits during the World War.

No. 10. Indorsing HR-No. 1758 providing for the commissioning of band leaders.

No. 11. Advocating that when funds are available, Air Corps officers not below the rank of Captain be permitted to attend the Air Corps Tactical School.

No. 12. To permit the rating of "A. O." being given to Air Corps officers of the National Guard, omitting the existing requirement that they must have served for one year with an observation squadron of the Regular Army.

No. 14. To allow the rating of "Airplane Mechanic" to enlisted men of the National Guard in lieu of flight pay, in cases not in excess of 10 per cent of the enlisted strength.

Officers for the coming year were named as follows:

President: Major General Mathew A. Tinley, Iowa National Guard.

Vice-Pres.: Major General Roy D. Keehn, Illinois National Guard.

Treasurer: Brigadier General Milton R. McLean, Kansas National Guard.

Secretary: Brigadier General Fred M. Waterbury, New York National Guard.

The Executive Committee:

The President of the Association.

Brigadier General H. T. Johnson, Vermont National Guard.

Brigadier General Dudley J. Hard, Ohio National Guard.

Brigadier General Ellard A. Walsh, Minnesota National Guard.

RESERVE NOTES

Excerpts from Annual Report by General Douglas MacArthur, Chief of Staff, U. S. Army

Without officers, and I mean trained officers, armies are nothing but mobs, and successive disaster must almost certainly bring final defeat before commanders can absorb the lessons they should have learned in peace. An army without trained leaders is a contradiction in terms.

The fitness of officers therefore is a matter of serious concern to the War Department, a concern that would be intimately shared by the whole American people if there were universal appreciation of these basic truths. But because war is of infrequent occurrence, and because its dramatic rather than its technical side is emphasized in popular histories of military campaigns, the shibboleth persists that a commander's duty comprises nothing more than urging his men forward to the charge. Men who would tremble at the thought of plunging a surgeon's knife into the abdomen of a suffering appendicitis patient seem to have, although equally ignorant of applicable technique, a bland confidence in their ability to maneuver thousands through the dangers of a shell-torn field to the never-changing end of glorious victory. Though they might stand in helpless wonder before the intricacies of a machinist's lathe they apparently assume that the complicated and dangerous weapons of modern war miraculously operate themselves, to the consternation of the enemy and our own benefit.

No man, whatever his calling, can have greater need for the ultimate in professional knowledge and skill than he to whom falls, for example, the responsibility of leading a single infantry battalion in battle. The mere bringing up of his battalion to the front, adequately prepared for battle, represents the fruition of weeks or months of intensive effort based upon years of self-preparation. Every man in the unit must have been diligently and properly practiced in the use of rifle, bayonet, and gas mask. Specialists must be expert in the use of machine guns, automatic rifles, 1-pounder cannon, and 3-inch mortars. The commanding officer must know that his supply and communication units are well trained and that his medical detachment is ready to render efficient service. He must be assured that each man knows how to conduct himself under shellfire, under air, tank, and gas attacks, and through every vicissitude of modern battle. He must train every element of the command to work smoothly and efficiently with every other. And finally the leader must have developed to the highest degree his own understanding of human nature and his capacity for personal leadership, for in battle men will follow only those whose demonstrated efficiency inspires confidence and respect.

Once the commander has brought his unit into position for attack, he must decide correctly upon the best formations and methods to be employed against the particular opposition he has encountered. He must give appropriate orders to every unit in his battalion and to elements attached to it; he must make sure that his communications will keep him in touch, throughout the progress of the engagement, with each portion of his whole command and with coöperating units. Every factor applying to supply, reserves, wounded personnel, entanglements, entrenchments, transportation, and, above all, to the morale of his men must be studied and provided for. He must be able to follow with a discerning eye the progress of the battle so that at its crisis he may make the most effective use of all his remaining assets. And he himself must be so accustomed by peace-time maneuvers to efficient performance of his control functions that the stress and nervous strain of battle will not paralyze his brain and nullify the efforts of his whole command.

As far as possible every officer of the National Guard and of the Reserves is now assigned to the position he would be expected to fill in an emergency of the immediate future, and to the greatest practicable extent his training is directed toward qualifying him for the particular duties applying thereto. In this way each can be expected to acquire reasonable proficiency in his particular military function, providing only that he is offered and avails himself of training opportunities and that his morale and interest are maintained at high levels.

Our minimum requirements in the fields of personnel and training include theoretical instruction for all components of the Army and for the Reserve Officers' Training Corps and the Citizens' Military Training Camps on the scale of the 1932 program; an Officers' Reserve Corps of about 120,000 with two weeks' active duty training for 30,000 annually; maintenance of the National Guard at least at existing strength with 48 armory drills yearly and two weeks' field training in as large formations as practicable; target practice and field exercises, to include maneuvers by large commands, for all tactical units of the Regular Army, and an enlisted strength of 165,000. This number of enlisted men will provide training cadres of satisfactory strength and an efficient tactiful force of reasonable size constantly available for emergency use.

The missions, requirements, and general conditions of the civilian components have already been generally discussed in those sections of this report that pertain to the Army as a whole. But efficient development and preparation of these elements for their vitally important place in our system of land defense involve some special measures and some considerations applying to them exclusively.

The civilian components constitute a volunteer reserve for the professional force, and the greater portion of the time they devote to military purposes, particularly in the Officers' Reserve Corps, is gratuitously given. Consequently, among them a high morale is essential, not only to efficiency but to their very existence.

Since, with negligible exceptions, no member of the civilian components gains a livelihood from military activity, the matter of emoluments has not for them the vital importance that it has for professional soldiers. Their principal incentive for pursuing military training as an avocation is a patriotic desire to fit themselves for efficient service in a national emergency. Their greatest reward is definite assurance that the value of their efforts is recognized and appreciated by the Government. They are entitled to, and it is essential that they be accorded, proper opportunity to prepare themselves for emergency duty. It is important also that policies controlling appointments, promotions, and administration clearly evidence the Government's interest in their welfare and efficiency.

Selection and promotion of personnel in the National Guard are accomplished under State authority. For the Officers' Reserve Corps appropriate policies, crystallized some 2 years ago after continuous study throughout the period since the World War, have received practically unanimous support from the members of that organization. Favoritism and special influence have no weight in initial appointments, and promotion is accomplished under methods that recognize efficiency and experience. These policies have been faithfully adhered to by the Department, with splendid effect throughout the Corps.

With organization and administration of the civilian components established on a satisfactory basis, the chief concern of the War Department is to insure their steady development as an efficiently trained portion of the Military Establishment. Their theoretical training usually involves but slight direct expense, and can be largely controlled by administrative regulations and policy. Winter classes under Regular Army instructors, closely supervised and progressive correspondence courses, and individual contacts are all utilized to promote the military efficiency of these elements. During recent years it has been possible also, under congressional authorization, to detail annually a few selected officers for short terms at the Army's general and special service schools.

But opportunity for active-duty training is rigidly limited by the sums provided for the specific purpose, since existing law very properly provides that during such tours each member of the civilian components will receive the normal pay of his grade. In the National Guard the number of armory drills with pay in any year is also fixed by appropriations. As pointed out in a prior section of this report, there is no substitute for field and other practical work, and a reasonable amount of it is essential to efficiency. This fact is fully realized by the civilian components, and failure to provide such opportunity would be interpreted by them as a complete lack of governmental appreciation of their personal sacrifice and would result finally in a distinct loss of interest and morale and definite deterioration in their dependability for defense purposes.

In the sense that the training of the average officer of the civilian components is specifically directed toward qualifying him for a particular position in emergency, he must be considered a specialist. The purpose is to insure that he will be entirely competent for his particular war assignment. On the other hand, Regular officers, professionally equipped by lifelong devotion to military careers, must bring to an expanded emergency army that broad background of general experience and varied training that will enable them to coördinate and unify the activities of all arms and services. The professional and civilian contingents have each their specific places to fill in an amalgamated whole.

Under the practically stabilized and consistently followed training programs of recent years the civilian components have made steady and commendable progress in attaining a proficiency essential to their respective missions. They now represent a considerable investment in time, effort, and money, and an asset for emergency use that should be jealously guarded. Future policies should countenance no curtailment of programs that have attained these results, and in the case of Reserve Officers should provide for some expansion of field training. Junior combat officers of that corps should be called to active duty annually for 2 weeks' practical training and others in accordance with their somewhat lesser needs. The total yearly quota should not be less than 30,000.

The Reserve Officers' Training Corps and the Citizens' Military Training Camps should be continued on the basis prevailing for the past several years. The value of these as feeders for the Officers' Reserve Corps and as agencies for imparting a degree of military training to a typical cross-section of young Americans has been clearly established. Their cost to the Government is insignificant compared to the resulting benefits.

* * *

Reserve Officers' League

THE Alumni Reserve Officers' League of the State University of Iowa has been organized by Lieutenant Colonel Converse R. Lewis, professor of military science and tactics at the university.

All graduates of the Reserve Officers' Training Corps of the University of Iowa are ex-officio members of the league which has for its purpose: "the maintenance of one hundred per cent of the commissioned graduates of the Iowa R.O.T.C. on the active list of the Officers' Reserve Corps. * * *"

The league is conducted without expense of any kind to the members, and functions under the ægis of the professor of military science and tactics.

BOOK REVIEWS

POLO PONIES: Their Training and Schooling. By Paul G. Kendall, Lieutenant, U. S. Army. The Derrydale Press, 127 East 34th Street, New York City, N. Y. Price, $7.50.

In the production of this book Lieutenant Kendall has made a noteworthy addition to the literature already published on the subject of training polo ponies.

To the average polo pony dealer it may seem that he goes into too great refinement in the training outlined, while followers of orthodox schools of equitation will view with consternation some of his proposals for the flexions and making a mouth. However, the methods laid down are sound, and a large percentage of good playing ponies should be developed, if they are conscientiously followed by a rider possessing a reasonable degree of equestrian tact.

The book is well suited to polo players interested in developing their own ponies and those seeking to improve ponies already in play.

This book, like all others on horse training, should be studied with care and intelligence. A casual reading, even by expert horsemen, will not suffice.

To those undertaking the interesting work of training polo ponies, I would invite special attention to the following quotation taken from page xiii of the Introduction:

> "To almost every accomplishment one discovers that there is a simple 'key' or secret to its success. In the making of a good polo pony there is a 'key'. Its simplicity is determined by the intelligence of the trainer. *That key is the complete mastery of the pony's poll and jaw.* When the trainer has obtained this mastery and can in all stages of training keep the pony's jaw and poll relaxed and responsive, there is but little left to be done. It is with this idea in mind that every principle and method outlined in this book is advocated,"

and to Some Principles of Training—Chapter I; Diagrammatic Explanation of "On the Bit", "Flexions", and "Following the Mouth"—page 33; also "The Flexions of the Jaw" — Chapter IX.

These, if understood and tactfully carried out, are the keys to successful training — be it hunter, hack, jumper, charger, or polo pony.

THE GALLANT COMPANY. By H. R. Williams. Foreword by Lieutenant General Sir Talbot Hobbs, K.C.B., K.C.M.G., V.O., late G.O.C., 5th Australian Infantry, D.W. Angus and Robertson, Ltd., Sydney, Australia. 275 pages. Price 6 shillings.

The author was an enlisted man of the Australian Imperial Force who gained his commission during the war. He kept a diary during the war and also succeeded in getting hold of the letters he had written home during the war. We have the word of the late commander of the division that the incidents cited in the book are not exaggerated.

This book is something more than "just another war story". It is a story of the war as seen by one who fought it from the ground, who lived that worse than a dog's life which the soldiers of every nation engaged were compelled to live, and who emerged with that which came to every man who went through the inferno of 1914-1918: a love for his fellow countrymen, an appreciation of the heroism and selflessness of men who fought, bled and died for their country, taking only what consolation there is in the submerging of self in country.

While this book is written by an Australian, of Australians, for Australians, it will prove interesting to those of other nationalities as well. Besides, it is of interest to "see oursel's as ithers see us". For example, of seeing American troops for the first time, the author says: "We were surprised to see them wearing British steel helmets and armed with the Lee-Enfield rifle. The fact was that the American Army drew on the British Army for equipment. Even their food was supplied in great part by Britain and France. So was their artillery, and this remained so until the end of the war. The American airmen were either absorbed by the British and French squadrons or else their flying units were equipped with British planes. *Certainly the Americans created a huge reserve of troops in France, thus allowing the Allies late in 1918 to attack incessantly and so force the Germans to sue for peace.* (The italics are the reviewer's.) Physically, this American battalion looked a great body of men, all young and well set up. They resembled the Australians more than any other troops". And again, "There must have been some easy money made in Yankeeland out of munitions contracts".

The book is written in a pleasing, interesting style. It paints a word picture of war days, bringing out the bitter as well as the sweet. It is full of good philosophy and, all in all, is a good book for anyone to have.

HORSES FROM DEALER TO COVERT. By "Spider" Jacobson. Constable and Company, London. Price, 7s 6d.

With but few exceptions books on horses are either stories or extremely technical in nature. While the former are interesting and diverting, they are of little practical value. The latter, on the other hand, because of the many ramifications of this subject: breeding, care,

training, riding, etc., as a rule cover only that particular phase on which the author is an authority. Being more or less technical, they are seldom interesting to the average person who keeps horses for pleasure.

In his delightfully written book "Horses From Dealer to Covert" Mr. Jacobson has supplied a long-felt want. Evidently a man of wide experience and considerable success in making his own horses, Mr. Jacobson has set forth in a very pleasing manner the lessons he has learned from experience. Veteran and novice alike will appreciate the value of his temperate advice, for he gives instruction without pedantry and can point a moral with wit.

This volume discusses the principal problems involved in the acquisition, care, breaking, and schooling of young horses in a simple and practical way. Included are many suggestions which should prove valuable to that large class of sportsmen whose stable and means are limited. The subject of ["bitting" and "mouthing"] horses is particularly well put and should go far toward making good horses better.

In conclusion it might be said that there are only two classes of persons who would not profit by this book; those fortunate owners who can afford expert managers and the managers themselves.

FROG: The Horse that Knew No Master. By Captain S. P. Meek, U. S. Army. Illustrated by Charles Hargens. The Penn Publishing Company, Philadelphia. 297 pages, 4 illustrations. Price, $2.00.

The author is a captain in the Ordnance Department, U. S. Army. In his preface he states that he wrote the book because he wanted to, and that he presents it to the public for entertainment.

This is the story, allegedly based in part on fact, of a Cavalry horse *Frog*, which was a polo mount of more than exceptional ability, a steeplechaser who carried his rider to victory in spite of a syringeful of morphine under his skin, a protector of helpless women entrusted to his care, and the stern disciplinarian of such officers of his acquaintance as failed to grasp the purport of the term "officer and gentleman".

Parts of the story have previously been published in *Saint Nicholas Magazine*. It is essentially a boy's story; though rather fantastic, it is a good book for a gift to a boy who is devoted to horses.

BALANCING DAILY DIETS: Perley's System. By Major Reuben Noel Perley, I.G.D., Army Building, Omaha, Nebraska. Price, $2.00.

The science of dietetics has made important progress in recent years, and it is universally conceded that those who follow the rules have a better chance of long life than those who disregard them. Those charged with mass feeding have the obligation of seeing to it that the cumulative effect of their planning shall be beneficial. Army messes have received increasing attention in these latter years, but there is room for the further application of scientific principles. Major Perley says of his booklet, "It is the first system of accomplishing the balancing of daily diet by purely mechanical operations which has been offered. It is designed to be operated by men with the intelligence of first-class privates, and is being so operated. Three out of the five garrisons in which I have introduced the system have adopted the book universally. It appears that the other two will do likewise."

Major Perley is a graduate of the Q. M. C. Subsistence School and is a specialist in the economics and nutrition of foodstuffs. The text is introductory to Perley's "Tables of Food Values" and "Illustrative Basic Menus Covering 10-Day Cycle of Foods". These charts give evidence of painstaking labor and must be of great aid to dietists and students of nutrition "desiring a handbook containing authentic quantitative information of the nutrient qualities of ordinary foods in true 'dinner table' perspective, or in relation to the economics of diets." Its value to mess officers and mess sergeants is at once apparent, for the quantities required by one hundred men are stated and data given as to costs.

The foreword contains the following remarks by Dr. E. V. McCollum, of Johns Hopkins University, internationally recognized authority on nutrition:

"It seems to me that the study you have made is one of great practical value and should make it very simple for mess officers to provide balanced daily menus. Your method of presenting foods as to their content of the various nutrient principles would be approved by all scientific investigators in the field of nutrition. I am glad to express my admiration for the study and hope that you may have a sympathetic hearing from the officials of the War Department, so that you may be able, as soon as practicable, to apply your system in the Army."

MODERN HISTORY. By Carleton J. H. Hayes and Parker Thomas Moon. The Macmillan Company, New York. 945 pages. Price, $2.20.

Prepared as a text book for courses in Modern European History, and originally published in 1923, the authors have revised, enlarged and brought up to date this latest edition of their work. It is essentially an outline of political happenings and historic episodes which, in keeping with its general purpose, is neither too detailed, nor too critical.

LIBERALISM IN MEXICO. By Wilfred Hardy Callcott. Stanford University Press. 410 pages. Price, $5.00.

The author outlines the history of the liberal movement in Mexico from the acceptance of the Constitution of 1857 to the administration of President Emiliano Portes Gil, in 1929. It is an authentic presentation of Mexico's history during that important and tumultous period of her national existence.

SPORTS

Racing Arab Horses In Egypt

By Hamilton M. Wright

EGYPT is the center of Arab horse racing in North Africa. Almost twelve hundred Arab ponies, in addition to Arab horses, countrybreds, and thoroughbreds, are maintained on the racing circuit conducted by the Jockey Club of Egypt at the Gezira Sporting Club and the Heliopolis Sporting Club in Cairo and the Alexandria Sporting Club in Alexandria.

Arab horses are not so fast as thoroughbreds or countrybreds (viz. native breds) of thoroughbred or part thoroughbred derivation. In fact, the thoroughbreds will pull away from the Arab. Arab ponies run on an average eight to ten seconds slower in the mile than the large foreign horses. But for stamina the Arab pony cannot be beaten and at eight or ten years old, sometimes at twenty, will be putting up its top speed when the thoroughbred has been retired from the track for years.

The Bedouins are great racers and bring their horses long distances from Syria and Palestine, sometimes riding them all the way. The best of the Arab ponies that have won in native races may be worth from $50 to $150 but, if they win one of the big Egyptian races in their class, their value may mount to $250 and up. Hence some very shaggy but sturdy looking creatures in horseflesh are ridden across the burning sands in trips lasting three weeks and up by proud Bedouin owners whose ponies may represent almost their only wealth. If his pony wins, the Bedouin blossoms into gorgeous flowing apparel, and the shaggy beast is elevated into royal estate and currycombed until he shines like a thoroughbred.

One could then scarcely recognize him as the same horse, and if he maintains his record he stands a good chance of bringing his avaricious owner a relatively small fortune. The point is that you never can tell when one of these desert wanderers is going to run away with the field in its class.

Racing is held throughout the year, in Alexandria in summer and at Heliopolis and Gezira in winter time. The president of the Jockey Club of Egypt is Prince Omar Toussoun, a member of the reigning family of Egypt, a tall, slight, youngish man with an Oxford manner. He is unassuming and popular.

Under the rules of the Jockey Club race horses in Egypt are divided into the following classes:

Class I. All horses except Arabs and Countrybreds. This has meant a good proportion of English, French and Australian horses of thoroughbred derivation.

Class II. (a) Horses of thoroughbred stock got and foaled in Egypt.

Class II. (b) Horses of mixed breed, with Arab blood, got and foaled in Egypt.

Class III. Arabs.

But Arabs are the most numerous of all; Arab ponies, viz. horses of 14.1 hands and under being rated as ponies, are far more plentiful on the circuit than Arab horses. As many as 800 Arab ponies may sometimes be seen going through their paces in the oval inside the track at Heliopolis.

Racing in Egypt is carried on with a great show. King Fuad himself is the patron of the Jockey Club and maintains an elaborate stable. Among other owners of stables are the Baron Empain, son of the late Belgian multimillionaire owner of the Paris metro subway, the Prince Toussoun, Charles M. Baehler, manager of Shepheard's hotel for the past forty-five years and Chairman of the Board of Egyptian Hotels, Ltd.; the Hon. Mrs. Springgay, J. W. Gibson, the Ramleh Stables, Sir Percy Lorain, British Royal High Commissioner in Egypt; J. Mattosian, Ahmed Pasha Abboud, Said Effendi Abu Baker, Kamel Eff. Wahba, Major N. Lumsden, Mohammed Eff. Sultan. The complete list of Arabic and Egyptian owners would fill scores of pages.

Each owner has, of course, his distinctive colors. The jockeys come from all parts of the world, those of English, French, Egyptian and Arab predominating. The stakes are mutuels, and with the gay costumes of the Bedouin sheiks and the latest Parisian modes on lady racing fans, the races in Egypt are a panorama of color and animation.

Brussels International Horse Show, May 16 to 23, 1933

Country	First	Second	Other Prizes	Total
	Recapitulation of Prizes			
Belgium	2	2	46	50
France	4	3	19	26
Ireland	1	2	11	14
Italy	2	3	8	13
Holland	1		7	8

(From French *Revue de Cavalerie*, Nov.-Dec., 1933).

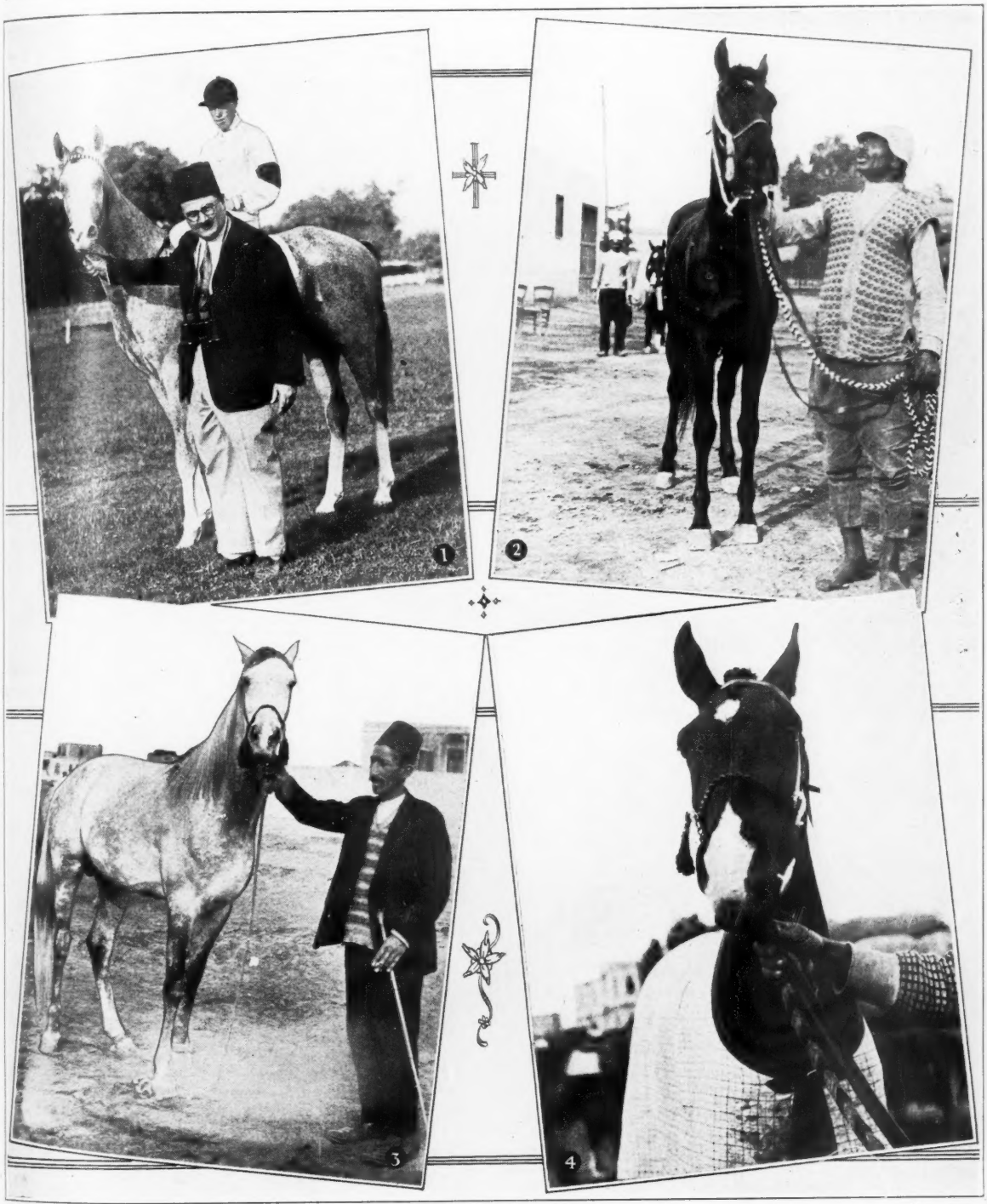
Warsaw International Horse Show, June 2 to 12, 1933

Country	First	Recapitulation Second	Total
Poland	8	4	54
France	2	6	16
Roumania	1		

Czechoslovakia: Five prizes.

"Our Anglo-Arabs, in particular, made a great impression on the Poles, Czechoslovaks and Roumanians. Their admiration for our Anglo-Arab breeding—very much justified, moreover—brought it about that many times the foreign spectators would insist absolutely that horses like *Acis* and *Berceuse*, which made good performances, were Anglo-Arabs".

(November-December French *Revue de Cavalerie*.)



1. Cairo, Egypt. All the King's Horses and All the King's Men Pull Together Every Now and Then—and Win a Race for His Majesty. Here's "El Kata," Prize Arabian Horse of the Sahara Owned by His Majesty, King Faud First of Egypt. "El Kata" Won the First Race of the Last Winter Season Opening Heliopolis, Smart Winter Rendezvous on the Edge of the Sahara. T. Jackson of the Heliopolis Race Course is Shown. Stefano Up. 2. A Trained, Racing Pony Favorite. 3. An Arab Stallion Ridden in from a Distant Point in Asia Minor, Covering 600 Miles in 17 Days, to be Entered in the Cairo Races. 4. A Fine Arab Pony Which Has Won Many Races at Heliopolis and Alexandria Tracks in Egypt.

Dublin International Horse Show, August 8 to 11, 1933

GENERAL RESULTS

France: 3 first prizes (and 3 cups); 3 other prizes.
Ireland: 3 second prizes and 3 other prizes.
Switzerland: 1 second prize and 3 other prizes.
Holland: 1 first prize and 1 other prize.
Czechoslovakia: 1 first prize.
Belgium: 1 prize.
(November-December French *Revue de Cavalerie.*)

The Coming Polish International Horse Show

THE Polish Equestrian Federation has notified the President of the United States Cavalry Association that the Seventh International Horse Show, organized by the Society of International and National Horse Shows in Poland, will be held at Warsaw, from June 1 to 11, 1934. American horsemen are invited to participate.

The 1933 Charger Championship

(Data from French *Revue de Cavalerie*, Berger-Levrault, Nancy, September-October, 1933.)

The contest took place at Vichy, June 23 to 27. There were eighty initial entries, fifty-eight confirmations of entry and thirty-seven contestants at the beginning of the tests. That so many of the original entries did not appear at the tests is, probably, due to rigorous selection by regimental commanders.

DRESSAGE TEST

Indispensable test, as showing whether the horse is obedient and easily handled and whether the officers have equestrian culture sufficient to be instructors. A taste for *dressage* is a good thing to cultivate in officers, looking towards the time when they must do their riding more soberly than in races and horse shows.

STEEPLECHASE

Was run on a soaked, slippery terrain. So, there were five falls—more than usual.

A falling horse is practically eliminated, on account of almost inevitable over-time. Really, the fall of a charger should be less severely penalized than a disobedience.

ENDURANCE TEST

The road test, is without difficulty, shows the horse's aptitude to march on modern roads, before and after a severe cross-country run.

CROSS COUNTRY

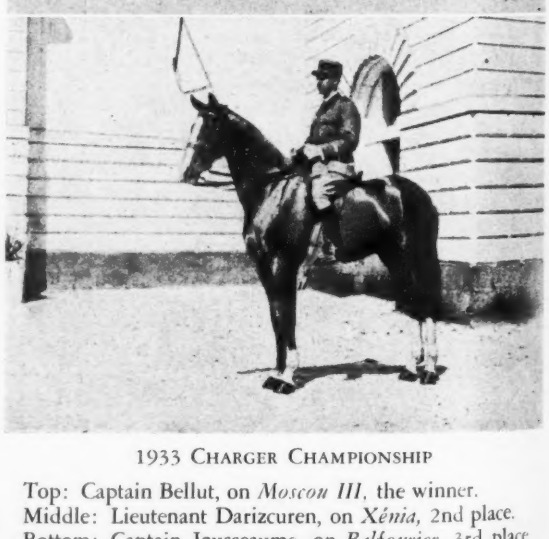
A well-traced course, some of it in the open, some in woods—a cross-country gallop.

JUMPING TEST

Massive obstacles of medium height; a difficult course between jumps.

THE WINNERS

1. Captain Bellut, Artillery School of Application.
2. Lieutenant Darizcuren, 2nd Hussars.
3. Captain Jousseaume, Artillery School of Application.



1933 CHARGER CHAMPIONSHIP

Top: Captain Bellut, on *Moscou III*, the winner.
Middle: Lieutenant Darizcuren, on *Xénia*, 2nd place.
Bottom: Captain Jousseaume, on *Balfourier*, 3rd place.

THE FOREIGN MILITARY PRESS

Reviewed by Major Alexander L. P. Johnson, Infantry

AUSTRIA — *Oesterreichische Wehrzeitung* — November 24 and December 1, 1933.

NEW FORTIFICATIONS. By Major General Schäfer, retired.

The ample publicity enjoyed by the frontier fortifications of France, the author writes, is indeed surprising and contrasts markedly with the custom that prevailed in the days before the World War. France permits her press to publish photographic views of sections of these forts, and to give detailed accounts of their armaments and installations as if to allay on the one hand French apprehensions, and on the other, to impress her probable enemy with the formidable character of her defences.

From the published data we learn that principal forts have been erected at intervals of ten kilometers along the German frontier. These are so well constructed that they can withstand the fire of any weapon from machine guns to the most powerful artillery. The interval between these forts is dotted with smaller works and machine-gun nests. Large subterranean barracks farther to the rear are likewise proof against bombs and gas. According to Czechoslovak sources, the author states, these lesser "works" are concrete blocks 10-12 meters square, and one to two stories high. The total excavation for each of these structures amounted to about 10,000 cubic meters. The garrison of the blockhouses consists of twelve men with machine guns. The cupola accommodates the observer and one machine gun with gunner. This gun is sited for fire against targets at close ranges, while the guns emplaced in the lower tiers have the more distant fire missions. These works are so well concealed and camouflaged that they cannot be seen at a distance of 50 meters.

Mobile fortification parks designated by the French as "fortifications à roulette" contain, besides munitions, stores of material and equipment for the construction of trenches, concrete bases and obstacles. They are located near railheads ready for immediate transport.

Italian sources, the author writes, describe the forts of the second line, about 1½ kilometers in rear of the first line, as turret forts armed with light field guns. Each of these forts supports ten of the front-line blockhouses. The walls of these forts are four to five times as strong as those of the famous Fort Vaux at Verdun which, the author recalls, after two months of sustained bombardment during the World War remained practically intact. Only three out of 18 chambers suffered actual damage.

The French fortifications, the author states, are fully manned at a permanent war footing. The garrison comprises a total of 42 especially trained battalions of infantry, thirty regiments of field artillery, and six regiments of heavy artillery, representing more than 100 batteries of all calibers. In addition to these there are two regiments of engineers (sappers and miners), one regiment each of signal and railway troops and three companies of electricians. The total strength of this garrison is estimated at 50,000 officers and men, whose sole mission even in time of peace is to defend the frontiers of France against a possible German attack.

The Belgian Crown Council, on October 11, 1933, the author writes, set aside 230 million Belgian francs for the construction of fortifications along the German frontier. The projects comprise (1) preparation of defensive works on the Hervé Plateau between Liége and Aix-la-Chapelle; (2) construction of "points d'appui" along the frontier zone in the provinces of Limbourg, Liége and Luxembourg; (3) completion of the fortifications of Liége and Namur; (4) organization of a fortified area in the vicinity of Ghent for the defence of the Scheldt sector.

Turning his attention to the Pacific, the author believes that the prevailing situation in that part of the world is quite serious. Construction of new forts forms an important part of the Japanese program of defence. The Japanese are very secretive in this matter, and the author recalls the strict regulations the Island Empire enforces upon foreign aviators who contemplate flights over any portion of Japan.

The author quotes the Italian naval review, *Rivista Marittima,* to the effect that Japan is now engaged in fortifying the Marianas, Marshall, Caroline, and Pelew Islands. This work, it is said, has been in progress since 1932. He states, that the Japanese have consistently refused permission to American vessels to visit these islands, and that when the League of Nations got interested in the matter and proposed an investigation the Japanese withdrew from the League and declared that these islands are Japan's spoils of war, and that Japan does not recognize "mandates."

The Italian source named states that the principal fortifications are located on the Pelew Islands, about 1,000 kilometers east of the Japanese archipelago. Bases for submarines and seaplanes have been established on the island group of Kossol Reef and on Matake Island. The fortifications of Korov Island are said to be armed with 203-millimeter guns. The principal base, the author states, is Seipan Island (Truk?) in the Carolines. The harbor of this island can accommodate ships aggregating 4,000 tons. The Japanese spent about $6,000,000 to complete these fortifications. Sugar refineries are so constructed, the author states, that they can serve as bases for 305-355-mm. coast defense guns. At present the Japanese are concentrating their efforts to fortify the

islands of Wolsai, Uyelong, Kuayalong, Walvelab and Rongelab, the latter only about 1,000 miles west of Honolulu.

The author concludes his survey with the observation that the United States have improved their fortifications in California, Hawaii, Panama and in the Philippine Islands, and that even far-away Australia is pushing her defensive plans by completing Port Darwin as a naval base which, the author believes, will be used by the joint British and American navies in the event of a war with Japan.

CHILE—*Memorial del Ejercito de Chile*—March-April, 1933.

THE KEY TO EUROPEAN PEACE. By Professor Guillermo Ferrero.

The well-known Italian historian, Professor Guillermo Ferrero, contributes a few interesting observations in support of the French proposal to abolish all professional armies in Europe, such as was imposed upon Germany by the Treaty of Versailles, and their replacement by a militia system of the Swiss type.

The author differentiates three types of military systems in contemporaneous Europe: (1) the professional army of German and British model; (2) the permanent armies based upon the principle of universal compulsory service like those of France and Italy; and (3) the militia of Swiss type. Professor Ferrero voices the opinion that the professional army is best adapted to wage political wars which, he observes, are always wars of aggression. He states that in the past, professional armies have always been used in wars of aggression. The great permanent armies of today owe their origin to the genius of Napoleon. Like the professional armies, these huge military machines led by professional officers are trained for aggressive warfare. Their military preparation is predicated upon the principles of wars of aggression, hence they differ from the truly professional army type only in the method of recruitment. The militia is the only truly defensive type of army. Professor Ferrero, therefore, concludes, that Europe's peace and salvation depend upon her speedy return to the pristine concept of the conscript army.

The learned professor, like so many pacifists, overlooks the simple fact that aggression, lust for conquest, and expansion do not result from any particular type of army, but rather from the state of mind of a people. Even a casual study of American history is sufficient to demonstrate that the innate urge of expansion may impel a people to aggression even though it may be lacking in the necessary military means and preparation. The small, ham-strung, poorly trained and equipped "professional" army maintained by the United States before the Civil War certainly did not inspire aggression, neither did its condition of woeful inadequacy deter the American people from seeking the "natural limits" of their commonwealth. Verily, great reputation as an historian is not yet an assurance against illogical thinking.

CZECHOSLOVAKIA—*Vojenske Rozhledy* — February, April, 1933.

ANTI-TANK WEAPONS. By Colonel Joseph Srstka.

The author presents some very interesting ideas about the qualities which, in his opinion, modern anti-tank weapons should possess. He assumes that the modern tank attack will, as a rule, be launched from a concealed line of departure not more than 800 meters from the hostile front line. By the same token he believes that the defence will seek to destroy the attacking tanks before they come within 200 meters of the main line of resistance. These tendencies will limit the action of the anti-tank weapon to a zone 600 meters deep, or to a period of 90 seconds. Inasmuch as anti-tank weapons are generally emplaced about 500 meters in rear of the main line of resistance, it follows that these weapons must possess a minimum range of 1,300 meters. They should have a flat trajectory and must be capable of piercing armor plate of 30-millimeter thickness. These requirements, in the author's opinion, indicate a weapon having a caliber of 20 to 30 millimeters and an initial velocity of about 1,000 meters per second. Such characteristics, he states, will permit effective use of these weapons against low-flying aircraft as well as against tanks.

The effectiveness of an anti-tank weapon, the author states, depends to a large extent upon the ease and rapidity of its manipulation. In view of the desire to render such an anti-tank weapon effective against aircraft, it should have an all-around radius of action, and a vertical field of fire of at least 60 degrees. A weapon that fulfills all these requirements, the author observes, is likely to be quite heavy, and will necessarily have to depend upon tractors for its mobility.

The author thinks that such a weapon must be provided with armor-piercing shells for use against tanks and with shrapnel for use against aircraft. He estimates that two anti-tank weapons of the type conceived by him on a front of one kilometer should be able to take care of twenty tanks in an attack, but suggests a third gun farther to the rear to combat any tank that may have eluded the two closer to the front.

FRANCE—*La Revue d'Infanterie*—September, 1933.

PROFICIENCY TESTS IN THE ROUMANIAN ARMY. By Lieutenant Colonel St. Nic. Petrescu, Roumanian Army.

The author outlines the system of proficiency tests employed by regimental commanders in the Roumanian Army to determine the professional fitness and aptitude of battalion and subordinate commanders and the combat efficiency of the units under their command. The tests, which consume two days for each battalion, consist of a tactical exercise, march discipline, ability of officers to issue proper orders, handling of troops and administrative functions of commanders in the field. The tactical exercises, conducted under simulated war conditions, are followed by a forced march of two hours (5 kilometers per

hour), terminating with a mission to quell a local disturbance. The return march ends at the target range, where the troops engage in combat exercises, range estimating, and tests with and without gas masks in locating concealed targets. Parade and review complete the program of the first day.

The second day is devoted to an inspection of the proficiency attained in various branches of theoretical instruction; moral, national and social education of the individual soldier; nomenclature and functioning of weapons. The colonel completes his inspection by an inquiry into the state of morale, the loyalty and patriotism of the troops, the general efficiency of the clerical and sanitary personnel and noncommissioned officers.

GERMANY—*Militar Wochenblatt*—July 4, 1933.

THE POLICY OF MIGHT IN THE FAR EAST. By No. 5.

The Pacific Ocean, the author of this leading article writes, has become the center of world politics. Since major wars comparable to the World War in point of destructiveness are conceivable in the future only in conflicts between continents, the Japanese, realizing this fact, are busily engaged in consolidating their position to meet such a contingency on the most favorable terms. The basis of the Japanese foreign policy was clearly defined by General Araki, Japan's Minister of War and militarist leader, in an article recently published in a Japanese military periodical. According to that article, the author states, General Araki and the Japanese government came to the conclusion that the League of Nations constituted an obstacle in the way of Japan's manifest destiny. That view unquestionably hastened Japan's withdrawal from the League.

General Araki believes in Japan's divine mission in the Far East. He writes: "The continuing chaos in China, the tense suffering of the people of India under the British yoke, the Soviet rule of blood and sword over Central Asia and Siberia prognosticate a general crisis in the near future. Under the circumstances Japan cannot afford to tolerate such a state of affairs. As the leading power of Asia, Japan must assume active leadership. We must act and risk a struggle of despair to the last particle of our national strength and resources. The white race regards the countries of Asia as fields of exploitation and oppression. Imperial Japan cannot allow these abuses to go unpunished. Japan has a divine mission. It must spread its national ideas over the seven seas and the five continents, if necessary by force of arms. The race of Yamoto must carry Japanese culture to the four corners of the World. Our Empire personifies Right and Justice. Every Japanese is expected to be ready spiritually and physically to put over this Empire concept if necessary by force of arms."

In the author's opinion, Japan's first objective is the achievement of political and economic hegemony in Asia. In the initial stages force plays an important part. Later, the author thinks, force will give way to diplomacy, and Japan will seek completion of her plan by means of treaties and alliances. Japanese colonization, the author thinks, is unlikely to play an important part in this project, and he cites the failure of Japanese attempts at colonization in Corea, Manchuria, and even in Hokkaido (Northern Japan) on account of the severity of the climate. The author believes that a quasi independent North China under Japanese tutelage is not at all unlikely in the near future. As to Japan's ability to carry to fruition this grandiose imperial plan, the author points to the prodigious efforts and remarkable military prowess manifested by Japanese troops during the Jehol campaign. Japanese infantry, he states, marched 31.5 kilometers daily for 13 consecutive days, and 80 kilometers daily for three days under the severest winter conditions. During this period troops subsisted on cooked rice, canned meat and fish, and vegetables. They were without shelter or hot drinks throughout this period. The author seriously doubts the ability of any other army to duplicate these feats.

Wissen und Wehr—October, 1933.

THE MILITARY-POLITICAL SITUATION OF SOUTHEASTERN EUROPE. *Anonymous.*

The post-war arrangements, the unnamed author writes, failed to solve the political and economic difficulties of the Balkans. The long series of political, military and economic treaties, conferences, alliances, blocks, understandings, and plans clearly demonstrate this one outstanding fact.

The treaty of Lausanne practically eliminated TURKEY as a Balkan state. Her recent understandings with Bulgaria and Greece do not alter the basic fact that Turkey, for the time being at least, does not pursue any serious international policy. Nevertheless the author thinks that sooner or later Turkey will demand elimination of the restrictive clauses of the treaty of peace which enforced demilitarization of her European frontier districts.

Geographical position determines the foreign policy of GREECE. Internal dissensions, revolutions, and too much politics in the army have seriously weakened the military establishment. Apprehensive of the strength of her northern neighbor, the Greek government granted important concessions to Jugoslavia in the Port of Salonica. Although Greece concluded treaties of friendship with Italy and Turkey, her foreign policy is essentially based upon the desire to preserve her own freedom of action. The Greek army, consisting of eleven infantry divisions and two cavalry brigades, is hardly strong enough to confer upon Greece a position of influence in Balkan politics.

BULGARIA lost substantial parts of her national domain as a result of her defeat in the World War. Bulgarian foreign policy, like that of Greece, aims at the preservation of Bulgaria's freedom of action. She maintains friendly relations with Turkey and Greece. Serious

differences, however, continue to exist between Bulgaria on the one hand, and Jugoslavia and Roumania on the other. Bulgaria can hardly forget the loss of the Dobrudja, which passed to Roumania. Neither will she forget the loss of Macedonia to Jugoslavia. The size of Bulgaria's army is limited by the treaty of peace. This restriction, the author notes, has a serious disturbing effect upon the political equilibrium of the Balkans.

Roumania made the largest territorial gains as a result of the World War in which she went down in defeat only to reap the benefits of the victory won by her allies. This over-extension of her national boundaries without geographic or ethnic necessity, the author notes, is the cause of serious conflict with the neighboring states at whose expense Roumania profited. Possession of Transylvania, the Dobrudja and Bessarabia, therefore, determine Roumanian foreign policy. The natural desire to preserve these territorial gains compels Roumania to align herself with the Little Entente, Poland and the French sphere of interests in the Balkans, notwithstanding the fact that such alignment is detrimental to her own economic interests. It is noteworthy that Roumania some years ago concluded a treaty of friendship with Italy also. This desire to cover herself in every conceivable direction, the author holds, is a tacit confession of weakness. The renewal of the pact with Italy encountered serious difficulties since Roumania could not meet the Italian demand to agree to maintain neutrality in the event of an armed conflict between Italy and Jugoslavia. On the other hand, the recent pact of the states of the Little Entente will, in the author's opinion, definitely terminate the friendly relations which heretofore existed between Roumania and Italy. The author believes that the Roumanian Army, consisting of 23 infantry divisions and two cavalry divisions, reflects the instability and inherent weakness of the kingdom.

Jugoslavia, the author writes, is the realization of that dream which prompted pre-war Serbia to risk the holocaust of the World War. This "Greater Serbia", which confers hegemony upon the Serbs over the Southern (Jugo) Slavs, the author notes, entails serious difficulties. The desire for the possession of the Adriatic Coast engenders the embers of conflict with Italy. Expansion to the south is responsible for the disturbances in Bulgarian Macedonia, while the territorial gains to the north brought the enmity of Hungary. The greatest problem of Jugoslavia is, however, engendered by the discontent of the Croat and Slovene elements of its population. The dictatorship of the King did not solve this problem, it merely postponed the day of reckoning. The author thinks that in the course of events Jugoslavia will either gravitate towards an even more stringent form of dictatorship or towards the formation of a federal state.

The foreign policy of Jugoslavia is determined by the desire to preserve all territorial gains, to maintain Jugoslav prestige in the Adriatic, and to secure an outlet to the sea at Salonica. These objectives naturally compel Jugoslav adherence to the Little Entente, and dependence upon France. It accounts for her cordial deference to Greece. The army consists of seventeen infantry divisions and two cavalry divisions. The high morale and fighting quality of this army is materially offset by shortage of material.

Albania with its Italian-trained army of 10,000 men, the author thinks, would be of little importance except for its complete dependence upon Italy. Albania, he writes, is destined to play a very subordinate part in future events.

The Little Entente, the author believes, is the most important factor in Balkan politics. Originally a series of bilateral treaties directed against Hungary, the Entente became a triple alliance in 1929. The supplementary pacts of February 16, 1933, created a permanent Secretariat for the conduct of foreign affairs. It provides that all international agreements must have the unanimous approval of all member states of the Little Entente. It expands the economic agreements as well as the military arrangements.

The political aim of the Little Entente is to present a united front and thereby acquire the advantages of being a quasi-Great Power. The objectives of the Little Entente are: neutralization of Austria; suppression of Hungary's activities in favor of treaty revision; perpetuation of French influence in the Danube valley, and the political isolation of Italy. In summarizing the situation, the author states that the Balkans continue to be the battle ground of two great powers—France and Italy. To outward appearances France and her allies seem to have the advantage of strength at least for the present. He adds, however, that this apparent strength is materially diminished by the internal and inherent weaknesses of the allies of France. This condition, he adds, will in the end benefit those countries which demand a revision of the treaties of peace which terminated the World War.

GREAT BRITAIN—*The Army Quarterly*—July, 1933.

MILITARY PRIZE ESSAY, 1933. By Captain Douglas Wimberley, M.C.

The prize competition called for a discussion of the following interesting and timely thesis:

"British forces may be required to engage in warlike operations under a variety of conditions, both as regards the nature and armament of potential enemies, and the climate and terrain in which the operations may take place.

"Discuss these different conditions and consider how the lessons of recent campaigns can best be applied to present-day training methods."

The author appropriately chose as his line of departure the ultimate objective of all military training: to achieve success in operations undertaken against enemies anywhere throughout the world. As to the probable nature of the campaigns in which the British Empire might be

come involved, the author considers: (1) imperial policing; (2) minor expeditions; (3) major campaigns, and (4) a national war.

In discussing past experience with minor expeditions, the author quotes some very valuable lessons from the *Official Military History:* (1) "A force, although it may be equipped with the most modern weapons, cannot command success unless its men are physically fit, well trained and well led. More powerful modern weapons demand a higher standard of intelligence in their employment in all ranks". (2) "The main requirements for efficient infantrymen were found to be physical and mental fitness, keen eyesight and supreme confidence in their weapons". (3) "The information obtained from air photographs was of great tactical and topographical value".

The author points out that the Official History of the Afghan campaign shows: (1) that bold measures in attack often paid well and that exposure, which might have been fatal in France, was frequently worth risking. (2) Skillful use of the ground enabled infantry to advance against hostile machine guns with reduced casualties. (3) Careful reconnaissance and well-trained horses will assure success to cavalry employed with boldness. (4) The leading of fast moving troops, such as cavalry, requires fast thinking and quick decision on the part of leaders. (5) Trained observation and intelligent use of the terrain are essential factors in the employment of infantry in mountain warfare.

The author contradicts the oft repeated statement that "infantry wins battles". He ascribes ultimate success to the "close coöperation of all arms". Applying the lessons of past wars to present training methods, the author states as his basic principle that "training of the mind must take precedence over all other forms of training," for "if a unit is to be really well trained for modern war, every individual man in it must be intelligent." He considers a general grounding in normal physical training, marching and trench digging as the best preparation for war fitness. "The use of the shovel," he observes, "is good exercise for the foot soldier." As to the effect of mechanization, the author believes it will tend to drive infantry more frequently to fight and maneuver in thick woods.

ITALY—*Rivista Militare Italiana*—February, 1933.

FORCES AND MATERIAL EMPLOYED IN THE CHINESE-JAPANESE CONFLICT, 1931-1932. By Major Guglielmo Scalise, GS.

After discussing the chief events of the Chinese-Japanese conflict and the forces and material employed by the belligerents, the author presents an interesting summary of the lessons and conclusions afforded by the Far Eastern campaign. With the exception of chemical warfare material, the author states, the Japanese employed all modern implements of war. At first the coördination of the different arms was not all that could be desired, but it greatly improved as the campaign progressed. Aviation played a considerable part in the operations, but experience demonstrated that success depends upon the employment of a large number of planes.

Tanks proved a disappointment to the Japanese since they were unable to overcome the numerous obstacles. A number of tanks were put out of action by Chinese mines and hand grenades. Japanese armored cars fared no better. Neither were the Japanese particularly successful in the use of smoke screens. The author observes that the Japanese refrained from employing gas partly because they were confident of success without having to resort to chemical warfare, and partly because of their desire to avoid further complications in their international relations.

The Japanese, the author states, invariably attacked with all available forces. Artillery and aviation prepared the attack. The intensity of the preparation was one of the outstanding features of the campaign. The infantry attacked immediately after the preparation and, as a rule, was preceded by tanks. In the early stages of the campaign the artillery preparation seemed inadequate. This coupled with the failure of tanks was largely responsible for the prolonged resistance offered by the Chinese. Attacks were generally launched in daytime. Nights were employed to consolidate and organize positions. The Japanese evidently desired to gain ground with the minimum of losses.

Although the Japanese had from 90 to 130 modern airplanes against the 20 to 25 obsolete craft of the Chinese, Japanese flyers seemed to concentrate their efforts to eliminate Chinese aviation, and until they accomplished that pupose they did nothing else. Japanese aerial attacks were generally made by six or twelve, and on one occasion by eighteen bombers escorted by a few pursuit planes. After the destruction of the Chinese air force, Japanese aviators concentrated their efforts to coöperate with ground troops, notably the artillery.

By way of conclusion the author observes that the Chinese-Japanese conflict clearly demonstrates that pacts and treaties designed to prevent war are not in fact effective preventives when a nation's vital interests are at stake. In such cases the aggressor will have no difficulty in finding a justification of his course. The great military lesson of the campaign, the author points out, is the fact that great difference in the relative strength of the contending parties has again led to position warfare. This, he observes, is not without significance for the future. He states that the campaign proved the correctness of the well-known principles of position warfare. In his opinion, intrenched positions cannot be taken except by envelopment. Artillery preparation must be intensified to the highest degree. The campaign, the author also notes, established once more the importance of organizing the defense. It likewise demonstrated that a decision without movement (maneuver) is inconceivable. And finally, the campaign proved that the machine gun is the principal weapon of the defense, while the attacker must largely depend upon his artillery.

ORGANIZATION ACTIVITIES

1st Cavalry Division, Fort Bliss, Texas

Headquarters, 1st Cavalry Division,
Fort Bliss, Texas, July 7, 1933.

ORGANIZATION OF 1ST CAVALRY DIVISION HUNT

THE El Paso-Fort Bliss Polo-Horse Show Association, being in conflict with announced War Department policy, is terminated this date. All paid dues carrying memberships beyond June 30 will be refunded to members concerned.

Hereafter horse shows and race meets in the First Cavalry Division will be sponsored by the First Cavalry Division Hunt, organized as follows:

President:
Major General Frank R. McCoy.*

First Vice President:
Brigadier General WALTER C. SHORT.

Second Vice President:
Brigadier General HAMILTON S. HAWKINS.

Board of Governors:
Colonel ALEXANDER B. COXE,
Lieutenant Colonel WILLIAM W. GORDON,
Major THOMAS G. PEYTON,
Captain JOHN C. MACDONALD,
Captain HUGH B. HESTER.

Treasurer:
Captain MURRAY H. ELLIS.

Secretary:
First Lieutenant GEORGE B. HUDSON.

M. F. H.:
Major FREDERICK GILBREATH.

Polo in the 1st Cavalry Division will be supervised under such regulations as the Commanding General may direct, by the Division Polo Representative, Major Arthur T. Lacey.

All Funds pertaining to the El Paso-Fort Bliss Polo-Horse Show Association remaining on hand after paragraph 1, above, has been complied with will be retained by the Treasurer until further orders.

By command of Major General McCoy:

A. B. COXE,
Colonel, General Staff Corps,
Chief of Staff.

Official:

H. C. HOLDRIDGE,
Major, Adjutant General's Department,
Acting Adjutant General.

Distribution: A.

*Now commanding 7th Corps Area.

Before a crowd of some 1,500 spectators the finals in the Fort Bliss Annual Boxing Tournament was held at the Army Y.M.C.A. this station on December 30, 1933. All bouts were under amateur rules.

The Lightweight title went to Raymon Daniel, Battery "B," 82nd Field Artillery, after he had won a decision from Pvt. Paul Silva, 1st Ambulance Troop, in four rounds.

Pvt. Russel Semrow, Troop "E," 8th Cavalry, won the Welterweight Title for the third consecutive year by knocking out Pvt. Timothy Hurley, Battery "B," 82nd Field Artillery, in the second round.

Pvt. T. D. Wilson, 1st Ambulance Troop, had too much experience for Pvt. William Elkings, Battery "B," 82nd Field Artillery, and won by a knockout in the second round. In the Middleweight event, Paul Stroud, 1st Ambulance Troop, won the Light Heavyweight by knocking out Pvt. Marvin Goldsby, Hqrs. Troop, 8th Cavalry, in the second round.

Pvt. Jack Marshall, Battery "C," 82nd Field Artillery, won the Heavyweight title from Pvt. Dalbert Hadock, 1st Ambulance Troop, in the third round. The battlers showed lots of speed for big men.

Referee: Daniel Brungardt, County Constable. Judges: Judge E. B. Elfers, Paxton Dent, Sport Editor, *El Paso Times,* and Daniel Brungardt. Announcer: Sergeant Paul Turi, and Timekeeper: Hugh T. Henry.

Troop A, 1st Armored Car Squadron, Fort Bliss, Texas

ARMORED CARS ON OUR SOUTHERN BORDER

During the past spring and summer Troop A, 1st Armored Car Squadron, has reconnoitered roads and terrain along the Mexican Border Monuments from Nogales, Arizona, to El Paso, Texas, and south and east along the Rio Grande River from El Paso throughout the Big Bend to Boquillas, Texas, a total distance of approximately one thousand miles.

For the purpose of these reconnaissance trips the border was divided into three sectors as follows: Nogales to El Paso, El Paso to Presidio, and Presidio to Boquillas.

On these reconnaissance trips the following motor transportation was used: three Pontiac cross-country command cars, two La Salle armored cars, two Franklin four-wheel-drive air-cooled armored cars, six Marmon-Herrington four-wheel-drive cargo trucks, one Chevrolet cross-country car, and one FWD tanker carrying 500 gallons of gasoline and 70 gallons of oil.

Instead of normal wood-burning field range the troop

carried a gasoline burner that was inserted under the regular field range. This burner is a home-made article built in the troop by Technical Sergeant Carich, Motor Sergeant of the troop. It burns comparatively little gasoline, which, in a motor unit, is always available. From the time the troop halts for a meal it takes just ten minutes to have water boiling; consequently, in addition to the saving of space for carrying wood it is possible to serve a meal in a very short time.

The radio equipment carried by the troop consisted of four SCR 163 sets: one on the troop Commander's car, one on each platoon commander's car and one on the troop communication car which carried, in addition, a SCR 109 set for air-ground communications. Throughout these journeys, except upon very few occasions, radio communication was maintained from head to tail in the column between troop headquarters and platoons when platoons were out on detached missions, and between the troop and Fort Bliss. The distance over which communications was maintained was from the length of the column, which was about one mile en route, to three hundred miles, which was the greatest distance the troop was away from Fort Bliss. The only interruptions of scheduled communication that occurred were due to atmospheric conditions and in blind or dead spaces.

The gasoline consumption was one of the interesting problems and was worked out by the use of a tanker carrying 500 gallons of gasoline and 70 gallons of oil and by carrying extra 55-gallon drums aboard cargo trucks. No gasoline was purchased on any of these trips. Enough was carried by the troop to sustain the organization throughout the marches. The gasoline consumption amounted to roughly about two gallons per mile for the entire troop. Each vehicle carried enough for a 200-mile trip.

Water was always a consideration in the southwestern country, where water sources were not plentiful. Here the value of the Franklin air-cooled engines was proved. The hotter the weather and the harder the engines worked, the more efficient they became. The new Marmon-Herrington trucks with the large radiator capacity and excellent cooling system were most efficient and required little additional water, even during the extremely hot weather and hard pulling through deep sand. Extra water was carried in ten-gallon cans on each cargo truck.

During these trips about 30 per cent of the travel was on paved or improved highways, 40 per cent was on unimproved country roads, deep sand, steep grades and mud, and the remaining 30 per cent was straight cross-country travel. This latter included sand, grazing country and rough rocky country. The only cars in the convoy that ever needed assistance were the Pontiac cross-country cars, which, being models of 1928, had seen their best days of service.

During these travels some interesting and hazardous incidents occurred. On the trip into the Big Bend one platoon was directed to proceed from Valentine, Texas, via Brites Ranch, The Rim, and down to the Rio Grande, and on to Candelaria. The trip over the Rim will live long in the memories of the platoon. The trail used was abandoned in 1924 for general use; consequently, from heavy rains and lack of upkeep it was in bad condition. The elevation at the top of The Rim was 4,000 feet, and the elevation at the bottom of the trail was 2,000 feet. The trail dropped 2,000 feet in one mile with hair-pin turns and grades of varying degree—from 15 to 30 per cent. At places where the trail led it was only wide enough for one car, and there was often a drop of two or three hundred feet into the ravines below. Only careful and experienced drivers could have negotiated such a trail.

One Marmon-Herrington truck was detached to make a trip through Fresno Canyon from Lajitas to Smith's Ranch, south of Marfa. The truck made the trip without strain on the motor through what was generally considered the roughest piece of road in the Big Bend. For several miles the road ran through the bottom of Fresno creek which was composed of deep gravel or soft sand. In this test the disadvantage of dual tires was apparent. The front wheels ploughed out a track, spreading little ridges of gravel or sand directly in the path of each rear drive wheel, making it necessary for the duals to plough out their own tracks thereby putting considerable additional work on the motor.

On the trip from Antelope Wells, New Mexico, to the Corner Ranch, which is located on the Mexico-United States boundary line, at lower southwest corner of New Mexico, and Hatchet Ranch, 50 miles to the north of Corner Ranch, all traveling was cross country. No roads existed in that section of New Mexico. Navigation was conducted by means of maps, compass and the Border Monuments. The Hatchet Ranch was made at night (a direction by compass was plotted and followed). About seven miles away from Hatchet Ranch the lights of the Ranch appeared for a few minutes, then suddenly disappeared. When the troop drove into the Hatchet Ranch yard, the troop commander dismounted from the leading car and called out, "Is there anyone here?" A voice from one of the darkened buildings answered, "Yes, what do you want and who are you?" The answer, "It is a troop of armored cars on reconnaissance," was made, to which the voice replied, "Oh, that's different," after which the individual who had spoken appeared carrying a gun and said, "You gave us a Hell of a scare. We could see your lights six or seven miles away coming from the direction of Mexico and knowing there were no roads in that direction, figured it could be just one thing—a raid from Mexico." He then called his cowboys out, explaining that we were friends. At that point seven or eight well-armed cowboys appeared, all ready to defend their families and stock.

1st Cavalry (Mechanized), Fort Knox, Kentucky

The First Cavalry (Mechanized) was organized at Fort Knox, Kentucky, on January 16, 1933, with a total personnel of 29 officers and 481 enlisted men having marched here from Fort D. A. Russell, Marfa, Texas, their home station as horse cavalry. The trip covered 1,428 miles and was made during very disagreeable weather overland in the vehicles assigned to the Regiment.

Colonel Daniel Van Voorhis, Cavalry, was selected as the officer to command the First Cavalry (Mechanized) and came to Fort Knox in November, 1931, from Fort Eustis, Virginia, and has remained in command of the Regiment to the present time.

The mechanization of this Regiment is the first step in determining the application of modern armored vehicles to missions of cavalry in war and in developing the tactical principles and technique effective for Mechanized Cavalry.

One of the most favorable factors of mechanized cavalry is that it is able to extend its sphere of operations to much greater distances and to increase the speed at which these missions are performed. The mechanized cavalry regiment is a self-contained tactical and administrative unit. To subdivide it by detaching its troops would materially reduce its effectiveness. The basic element is its combat cars which provide the striking power, all other elements being so organized as to assist the combat cars in their operations.

Cavalry mechanized may be known as an Army or GHQ unit and may be assigned to Corps for special missions. It is a very powerful weapon if used at the proper time by the higher commanders and is particularly suitable for employment on emergency missions, being organized and equipped for offensive action, consequently will be found usually in the army reserve.

Maintenance is carried on within the regiment to include replacement of unit assemblies. 1st Echelon Maintenance is carried out as a preventive measure by the drivers; 2nd Echelon Maintenance consists of adjustments and inspections performed by the designated crews in each troop and goes as far as to replace small parts; 3rd Echelon Maintenance is performed by the regular Maintenance platoon.

Mechanized cavalry marches at an average rate of 125 miles per day, with an average speed of 25 miles per hour with halts made at the end of the first hour and every two hours thereafter (and of 10 to 20 minutes' duration), with vehicle distances usually around fifty yards (50). Organizations march at distance usually of about one-half mile.

Fatigue of drivers of mechanized vehicles is much greater than would usually occur in driving of commercial vehicles, and length of marches must be adjusted accordingly. There should be a sufficient reserve of trained drivers always ready for replacements to offset this disadvantage.

The control of the regiment is an important phase and one which has been made extremely simple by the organization of the regiment into elements especially fitted to carry out specific missions. Control is by radio which is most widely used and equipment for which is for the most part entirely reliable. In the platoon, visual signals are usually employed.

Several tactical training trips have been made during the past year usually ranging in distance from 150 to 300 miles, all with appreciable results.

Fort Knox is very well adapted to the needs of this regiment, due to its varied terrain, which offers opportunities for development of this arm under all conditions.

GEORGE M. CHANCELLOR,
Corporal, 1st Cavalry (Mecz.).

* * *

Second Cavalry, Fort Riley, Kansas

On the occasion of the visit of the Chief of Cavalry to Fort Riley early in October, Troops E and F furnished the escort of honor. On October 12th the Chief of Cavalry was tendered a review, after which a full field inspection was held. Regimental drill, illustrating new Project formations, followed the inspection. For the purpose of demonstrating the tactical employment of the regimental motor train, scout car platoon and caliber .50 machine guns, the regiment then carried out a field exercise involving the passage of the Kansas River at Engineer Bridge and the establishment of a bridge head on the high ground north of the river.

During the period October 18-21 the regiment participated in the field exercise of the Cavalry School Brigade. Due to the absence of many of the Regimental Officers on C.C.C. duty, students from the Cavalry School were attached to units of the regiment for the period of the Field Exercise.

Two teams made up from the 1st Squadron and Headquarters Troop and the 2d Squadron and Machine Gun Troop represented the regiment in the Post Football League. Each team played a schedule of five games. They finished 6th and 3rd respectively in the league of six teams. Seven players from the regiment were selected for the Post all-star football squad which was organized for post season games.

The Post Bowling and Basketball Leagues are now under way. Each troop is represented by a team in each league.

Due to reduced ammunition allowances, the regiment has found it impossible to engage in small bore inter-regimental rifle and pistol competition as was customary in past years. However, an inter-troop recruit competition is contemplated at a later date.

A feature of the training program of the Machine Gun Troop is a series of troop horseshows held monthly in the

2d Cavalry Riding Hall. Cups are awarded to the winner of all classes.

Due to the arrival from Fort Des Moines for permanent station of Headquarters Battery and Combat Train and Battery E, 18th Field Artillery, the barracks and stables of the 1st Squadron have been consolidated.

1st Lieutenant A. M. Miller, III, was recently assigned to the regiment and joined. He has been assigned to Troop F and has been placed in charge of remounts, horseshow activities, the enlisted equitation class, and polo horses.

Within the past two months the following officers have rejoined after having been absent on Civilian Conservation Corps Duty:

Lieutenant Colonel Broadhurst, Majors Plassmeyer and Nelson, Captains Taylor, Collins, Dockler, Patterson, and Alexander, Lieutenants Kinnison, Waddell, Thayer, Williams, Mudgett, Randolph, Merrick, and Pegg.

The following are recent promotions of officers of the regiment:

Captains Barott and Nelson to Major.

Lieutenant Alexander to Captain.

On January 17th, a dismounted parade was held, and the following awards made to Sergeant Arthur L. Parr, Troop F, 2d Cavalry:

Purple Heart Decoration for shrapnel wounds received in action on November 9, 1918, while a member of the 1st Ammunition Train, in the St. Mihiel Sector, France.

Silver Star Medal, authorized by General Orders No. 1, 1st Division, dated January 1, 1920, for individual citation.

Third Cavalry (Less 1st Squadron) Fort Myer, Va.

THE Exhibition Rides at Fort Myer, Virginia, which have been presented for more than forty years, will continue to appeal to the friends of the Army. Washington has accepted these rides as an institution and one of the features of the winter season. Each year the popularity of the rides increases, and the personnel at Fort Myer, under the direction of Colonel Joyce, continue to improve the program.

There have been a great many variations of the program of Exhibition Rides as originally presented at Fort Myer. Among the early additions was the inclusion of the Field Artillery in what had been a Cavalry display. Many of the older attendants at the Exhibition Rides will recall that General C. P. Summerall (then Captain Summerall) commanded the Third Battery of Artillery, which, participating in these spectacles, demonstrated the maneuverability of a horse-drawn battery. The Field Artillery has continued to participate in the drills, and their maneuvers have always proved a very popular and thrilling feature of the program. The 16th Field Artillery, commanded by Lieutenant Colonel C. P. George, presents this year a battery drill in the riding hall at the extended gaits, and a demonstration of the technique of firing with the 75 mm. guns. A firing battery, also, illustrates the method employed in placing fire upon an enemy target, the adjustment of fire to bring about an accurate concentration and the subsequent shifting of that volume of fire when a new, and more important, target appears.

Following is the program of the first exhibition ride of the season, January 12, 1934:

1. Squadron Parade and Salute, Major A. D. Surles, Commanding.
2. Battery Drill, Battery B, 16th Field Artillery, Captain Harold T. Brotherton, Commanding.
3. Musical Ride, Troop E, 3rd Cavalry, Captain Lucian K. Truscott, Jr., Commanding.
4. Tandem Ride, Troop F, 3rd Cavalry, Captain George I. Smith, Commanding.
5. Cavalry Noncommissioned Officers' Jumping.
6. Firing Demonstration. Battery C, 16th Field Artillery, Captain William R. Frost, Commanding.
7. Rodeo Ride, Troop F, 3rd Cavalry, Captain George I. Smith, Commanding.
8. Cavalry Weapons Ride, Machine Gun Troop, 3rd Cavalry, Captain Callie H. Palmer, Commanding.

The Honorable Harry H. Woodring, Assistant Secretary of War, received the salute of Major A. D. Sutles, Commanding the 2nd Squadron, 3rd Cavalry, in the spectacular opening number of the program when the National and Regimental Colors, Field Music, and three troops of Cavalry were presented to him as guest of honor. Following this ceremony, the troops were maneuvered about the Riding Hall in various formations at the trot and gallop, a feature of the Friday Drills that has always been popular.

Colonel Joyce's other guests were: Mrs. George H. Dern, Mrs. Harry H. Woodring, Mrs. Henry Baxter, daughter of Secretary of War and Mrs. Dern; Honorable Alanson B. Houghton, former Ambassador to Great Britain, and Mrs. Houghton; Mrs. Sidney Cloman, Captain and Mrs. W. W. Galbraith, Colonel and Mrs. Ernest D. Peek of Governors Island, and Major and Mrs. Henry Leonard.

Guests of honor at subsequent rides have been:

January 19: Major General Paul B. Malone, Commanding 3rd Corps Area;

January 26: Major General Guy V. Henry, Chief of Cavalry;

February 2: Major General Harry G. Bishop, Chief of Field Artillery;

February 9: Major General George S. Simonds, Commandant of the Army War College.

Major Max Livingston, Jr., 305th Cavalry, who resides at Lochiel Farms, Exton, Chester County, Penn., and Major R. D. McCullough, 308th Cavalry, who lives at 3029 North Broad Street, Philadelphia, Penn., reported in January to Colonel Kenyon Joyce, Commanding Officer of Fort Myer, Virginia, to undergo two weeks of active training with the Third Cavalry at Fort Myer.

101st Cavalry, Brooklyn, N. Y.

THE *I Trooper*, published from time to time, by Troop I, 101st Cavalry is the work of Associate Editors T. J. Doran, F. E. Clarke, A. W. Dunham, J. R. Doran, and C. F. Isacke. Besides personal items (some serious and some devoted to the more or less mild "razzing" of selected personnel), the troop magazine contains accounts of unit activities, and always something informative in the way of extracts from Training Regulations, etc.

From a wealth of interesting items in *The I Trooper*, the following is selected:

PINE CAMP, 1933

Fallen into disuse this year is the old tune about Pine Camp being a "hell of a place, parlez-vous." Our Champion Crabber—you name him—was lost for a reasonable complaint. By a unanimous vote, this year's camp was the most pleasant, best organized, and most healthy we can recall. We are all out of superlatives to describe what is best summed up in Captain Mortenson's words, "from the kitchen to the picket line, everything ran smoothly and well."

We missed Lieutenant Tuck, Gordon Watson, and the other men who could not be with us. We pictured them present and toasted them at the Annual Camp Dinner, which proved itself up to all the other Camp Dinners we have had.

As a matter of fact, the Sick, Lame and Lazy Call took only one man from I Troop during the whole camp, with the natural exception of cuts, bruises and what not that needed mending. We believe that establishes a record, and we might claim the mess was the reason for it, if we had not heard Paul Rapp's crack. Paul said he always *bolted* his food so that it would *stay down*. If *we* hadn't personally given him seconds at most meals and thirds at others, we might take that seriously—if we didn't know Paul.

We are very, very proud of one thing. We are proud of other things we could accomplish at camp, but we think this deserves special mention. It is the matter of Evening Retreats. We could watch them improve as the camp progressed, until we got to the point where we "sensed" that it was going right, as you always can. Then came the verification of that "sense" when Colonel Beattie commented to Captain Mortenson on how well the Troop performed. That little bit of encouragement was all we needed to know that it was satisfactory, and we vowed that the next Retreat would be as near perfect as was possible. We shined and we cleaned, and we cleaned and we shined, and we kept our fours as they had never been kept. And we were again rewarded when General Eggleston made the remark that he was very pleased with the appearance and performance of the Troop. The few words of praise we received were welcome, because we knew then that any good work on our part would be duly noted.

It was a long-doubtful camp, but doubly enjoyable when it did materialize. It's over now, and another bunch of pleasant memories is stored away. What about next year? Nobody knows—but we are all eager for it.

305th Cavalry, Philadelphia, Pennsylvania

THE weekly noon conferences held by this regiment have been made exceedingly interesting through the presence of Regular Army officers on duty in the Philadelphia area. Each of these instructors conducted an hour lecture dealing with his own branch in relation to coöperation with the cavalry arm. Some of the instructors and subjects were:

Colonel C. R. Day, FA., Artillery in Support of Cavalry.

Captain J. W. Younger, QMC., Supply of Cavalry Troops in the Field.

Captain C. H. Stafford, QMC., Logistics (Quartermaster).

Thus far, two of the future talks scheduled are "Military Engineering" by Colonel Woodruff, Engineers, U.S.A. and "Aviation."

The regiment is expecting to develop a pistol team to compete against local teams. Lieutenant Hunter is engaged in a thorough and systematic training and elimination process every Wednesday evening in the basement range of the 1st City Troop Armory.

About the first of March a new schedule of inactive duty training will go into effect. This schedule will provide training in preparation for the tour of active duty of the regiment with CMTC this summer.

306th Cavalry, Baltimore, Maryland

AFTER a two-hour cross-country ride over solidly frozen ground on December 10, 1933, instruction in equitation for Baltimore Reserve officers was discontinued until next spring. Again it was demonstrated that Reserve officers will enthusiastically participate in mounted instruction even under conditions involving considerable expense and time.

Major E. W. Taulbee, Unit Instructor, 306th Cavalry, has completed his tour of duty as Sub-District Supervisor, Civilian Conservation Corps. He reports that all officers, Reserve and Regular, on duty at these camps are getting the most valuable military training received since the war. The most important consideration in this duty is the fact that junior officers are called on to meet all practical questions involved in the handling of large bodies of men.

307th Cavalry, Richmond, Va.

MEMBERS of the regiment had the honor and privilege of hearing a most interesting and instructive lecture given in Richmond on November 23rd, by Lieutenant Colonel Charles E. T. Lull, C.W.S., Third Corps Area Chemical Officer.

A large representation from the 307th Cavalry attended the party January 9th, given in honor of Major General Paul B. Malone, Corps Area Commander, upon his visit to Richmond.

Major George W. Cutting, Warrenton, Va., has recently been assigned to the 307th Cavalry.

Major Harold H. Jacobs, Washington, D. C., has been transferred to the 306th Cavalry.

Captain E. C. Harrison, Jr., has been promoted to Major, Aux-Res.

First Lieutenant Dan H. Pletta, Blacksburg, Va., has been transferred to the Ord-Res.

3d Squadron and Machine Gun Troop, 307th Cavalry, Norfolk, Virginia

MAJOR GENERAL PAUL B. MALONE, Commanding the Third Corps Area, will meet with and address all Regular, National Guard and Reserve Officers in the Norfolk Area on January 11, 1934, at the Fairfax Hotel, Norfolk, Va. This meeting promises to be one of the largest ever held in Norfolk, and extensive plans are under way for the entertainment of General Malone. The officers of the Squadron have combined with the senior officers of the National Guard and Reserve Units in the Norfolk Area to tender General Malone a dinner prior to the meeting. The Unit Instructor, Major David H. Blakelock, Cavalry, has general charge of the arrangements for the dinner and meeting.

Four hundred and fifty colored members of the Civilian Conservation Corps participated in the Emancipation Day Parade held in Norfolk, Va., on January 1, 1934. The participants were from the 1264th, 1286th and 1287th Companies (C), CCC, now stationed at Fort Story, Va., and form part of Sub-District No. 16, CCC, for which the Unit Instructor is Supervisor. The men presented an excellent appearance and many favorable reports have been received regarding their appearanc and conduct.

308th Cavalry, Pittsburgh, Pennsylvania

MAJOR R. R. D. McCULLOUGH, Cav-Res., was on December 21, 1933, ordered to active duty for a two weeks' period effective January 7, 1934, at Fort Myer, Va.

On Wednesday, December 6, 1933, Major General Paul B. Malone addressed the officers of the Pittsburgh Chapter of the Reserve Officers' Association at a dinner held in his honor at the Keystone Athletic Club in Pittsburgh. The dinner was well attended and the 308th Cavalry quota was well filled both from Pittsburgh and other cities in the area.

The following officers of the 308th Cavalry are on duty with the Civilian Conservation Corps, where they all find the duty interesting and instructive:

Captain Edward R. Ayres, Captain John B. Brettell, Captain John N. Benney, Captain Albert J. Bintrim, Captain Robert C. Wallace, Captain Clifford G. Beese, Captain James R. Guyer, First Lieutenant Herman A. Huhn, First Lieutenant Truman G. McMullan, First Lieutenant Edwin P. Geesey, First Lieutenant Alexander M. Stewart.

862nd Field Artillery, Baltimore, Maryland

THE 862nd Field Artillery has five of its officers on duty with Civilian Conservation Corps Companies. Their recent locations are as given below:

Captain Frederic R. Simmons, C.C.C. Co. No. 357, Damascus, Va.

Captain Theodore F. Watts, C.C.C. Co. No. 1393, Sperryville, Va.

First Lieutenant William W. Withey, C.C.C. Co. No. 398, Spencer Forest Camp No. 2160, Spencer, Mass.

First Lieutenant Marion J. Woodford, Jr., C.C.C. Co. No. 1325, Upper Strasburg, Pa.

Second Lieutenant Jack Stern, C.C.C. Co. No. 1305, Camp Crane Flats, Granite, Oregon.

This service is unusually arduous but of extreme value to the Reserve officers, giving them all the practical training that will be required in case of mobilization, such as the housing, clothing, feeding, and the responsibility for the personal welfare and comfort of all the men in their companies. It presents an excellent opportunity to the Reserve officer in the exercise of the art of handling men, and the exercise of leadership. Any Reserve officer who can satisfactorily cope with the problems in this adventure will be well equipped indeed for the problens of mobilization.

Major J. M. McDowell, the new Unit Instructor for the 862nd Field Artillery, reported to the Chief of Staff, 62nd Cavalry Division, on January 2, 1934. Major McDowell is a graduate of the Command and General Staff School at Fort Leavenworth, Kansas, and was an instructor at the Field Artillery School, Fort Sill, Oklahoma, for four years. During the World War Major McDowell served with the Second Regular Division, commanding the 2nd Battalion of the 15th Field Artillery at Belleau Woods.

Command and Control System in Horse Cavalry

(Continued from page 8)

grouped into a regimental train. There are really two echelons to be considered—one that should be with or near the troops, the other a shuttle group for replenishment of supplies from the distributing point or railhead.

As additional men are authorized, say in a 610, a 690, or a 710 enlisted men Peace Organization, the above setup would be increased to include a third command car with an extra man (a machine gunner) in each car, a demolition section, a light machine gun group of two guns for the protection of Regimental Headquarters and the Regimental Command Post (additional reasons for this last requirement may be given in a subsequent paper upon the subject of Horse Cavalry versus a mechanized force. Ample justification has been indicated for it in recent training experiences).

This organization is not what we should like, but assuming that no additional men can be obtained from Congress, we can not hope for an organization that will be satisfactory. This one does retain the essential framework and does provide a Command and Control system which is vital to the proper functioning of the whole, as the brain and nerve system is vital to the human body. This system should be kept unimpaired at all times, in order that we can keep it trained, efficient, and ready to function at once in passing from peace to war.

New Facts Simplify Bot Control

(Continued from page 57)

the hairs of horses by washing the parts with 2 per cent solution of creosol or a suitable dilution of coal-tar creosote dip; wait a month for the bots in the horse to concentrate in the stomach and then give the internal treatment stated below. Treatment may be given any time during the winter before March 1, but the earlier it is done the better for the horses.

Experiments in the Bureau of Animal Industry indicate that liquid carbon disulphide is the most effective agent available for the destruction of bots in the stomach of the horse. . . .

The Annual Meeting

(Continued from page 56)

the following debts owing from 1932 business that were settled in 1933:

Books	$1,435.14
Production of Nov.-Dec., 1932 Cavalry Journal	584.88
	$2,020.02

These liquidated obligations exceed the apparent cash book decline by $1,127.43, a figure representing the net profit in 1933 business, made possible by a reduction in printing cost of $740, in rent of $170 and in other overhead expense of $1,052.50.

According to the record of transactions, the net profit is $800.05, a figure exceeded by the cash book net profit on account of collections of obligations contracted by customers in 1932.

The volume of business in 1933 bears the following relationship to that in 1932:

Book Sales	49.7%
Magazine Sales	98.0%
Subscriptions:	108.8%
Total	79.95%

MEMBERSHIP AND SUBSCRIPTIONS

Analysis of Association membership and JOURNAL subscriptions:

Regular Cavalry Officers	787
National Guard Cavalry Officers	225
Reserve Cavalry Officers	308
Other Active Members	108
Associate Members and Subscribers	276
Total Paid	1,704
Honorary Members	2
Life Members	2
Exchanges	79
TOTAL	1,787

GEO. M. RUSSELL, Colonel, Cavalry,
Secretary-Treasurer.

Upon motion the report of the Secretary-Treasurer-Editor was accepted. Upon motion this officer was commended for successful production of the CAVALRY JOURNAL and conduct of the business of the Association during 1933.

The following were unanimously elected to the offices indicated:

President: Major General Guy V. Henry.
Vice-President: Colonel Llewellyn W. Oliver.

Executive Council: Brigadier General Jacob F. Wolters, 56th Cavalry Brigade; Colonel Robert McC. Beck, Cavalry; Colonel Charles Burnett, Cavalry; Lieutenant Colonel Robert C. Richardson, Jr., Cavalry; Lieutenant Colonel George H. Cherrington, 308th Cavalry; Major Sidney V. Bingham, Cavalry; Major Gary F. Eppley, 306th Cavalry; Captain George I. Smith, 3rd Cavalry; 1st Lieutenant Willard G. Wyman, 3rd Cavalry.

When the business of the meeting was concluded, General Henry, whose detail as Chief of Cavalry expires this spring, gave an extremely interesting review of the modernization of the Cavalry. His remarks covered the development of armament, equipment and organization and the use of both horse and mechanized Cavalry in modern warfare, concluding with an inspiring reminder that on Cavalry officers depend the efficiency and prestige of the arm.

There being no further business, the meeting adjourned at 9:45 p. m.

GEO. M. RUSSELL,
Colonel, Cavalry, Secretary

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